

TECHNOLOGY

REVIEW

March 1956



technology review

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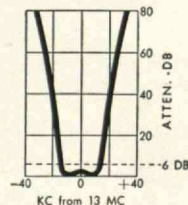
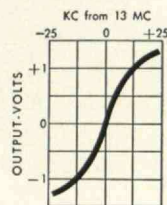
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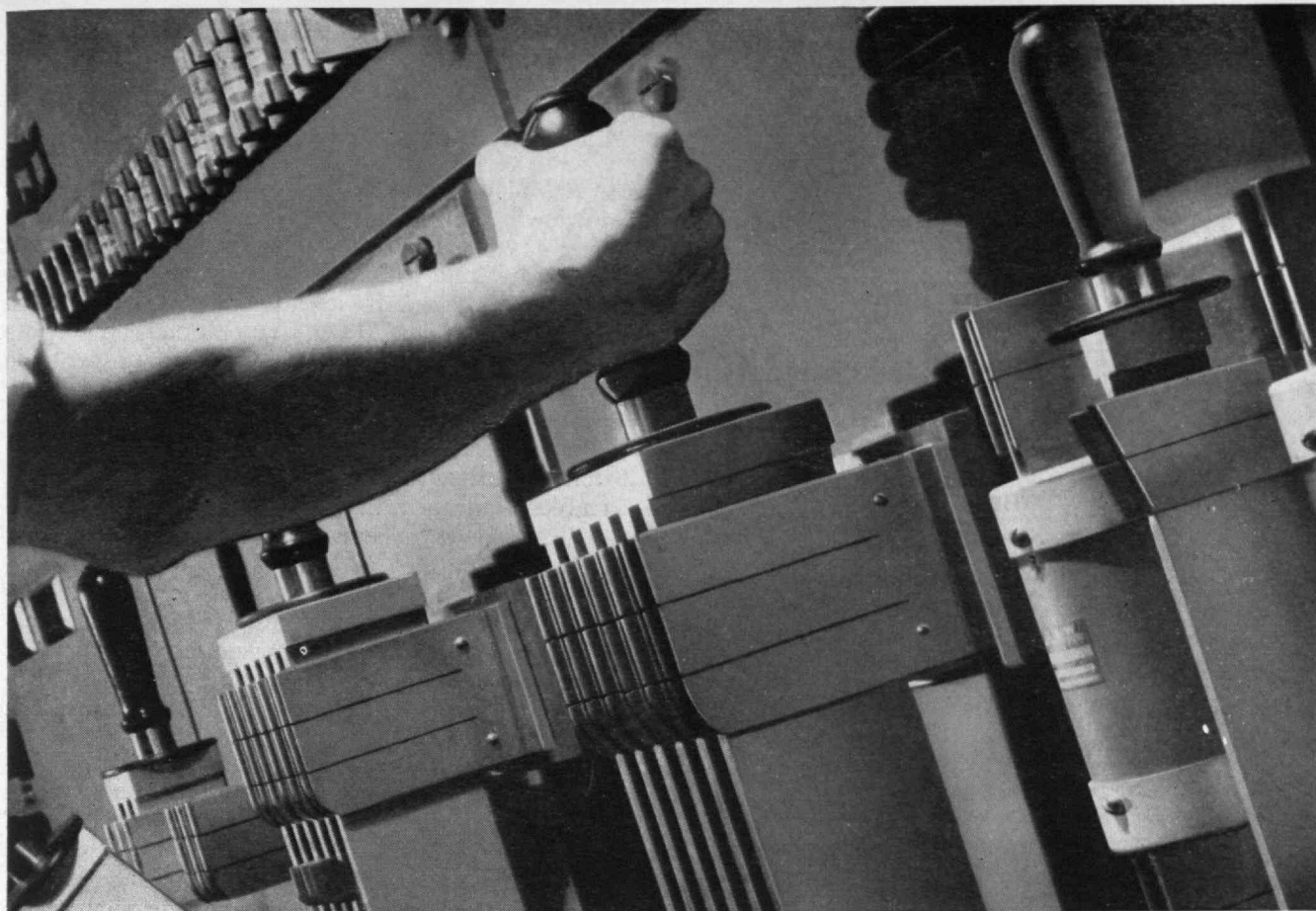


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THE TABULAR VIEW

A Major Portion of the text in this issue of The Review is drawn from events that transpired on January 4, when 1,550 Technology Alumni and friends of the Institute gathered in the Grand Ballroom of New York's Waldorf-Astoria Hotel to take part in a dinner given by the M.I.T. Corporation. The purpose of this event—which was attended by a veritable "Who's Who in Industry and Finance"—was to pay tribute to Karl Taylor Compton, to record with gratified appreciation the funds that make possible erection of the new Compton Laboratories, and to report on recent advances that are being made at M.I.T.

Recent news releases of some of the important work accomplished at M.I.T.'s Lincoln Laboratory, and discussion at the Midwinter Meeting and Regional Conferences, further testify to the intense activity originating at the campus on the Charles River Basin. Some of these activities are also recorded in this issue; others will be brought to Review readers.

Mighty Multiplier.—The report of JAMES R. KILLIAN, JR., '26, President of the Institute, on current events at the Institute (page 231), made at the M.I.T. Corporation dinner on January 4, mentions progress on construction of the new Compton Laboratories, expresses gratification for the support which made these new M.I.T. facilities possible, and announces the establishment of a new School for Advanced Study at M.I.T. The purpose of the banquet, Dr. Killian told his audience of 1,550 leaders in industry and finance, was to pay tribute to the leadership of the late President, Karl Taylor Compton.

K.T.C. and M.I.T.—From 1930 until 1954, Karl Taylor Compton was practically synonymous with the Massachusetts Institute of Technology. Tribute to the former M.I.T. President was paid by a lifelong
(Concluded on page 224)



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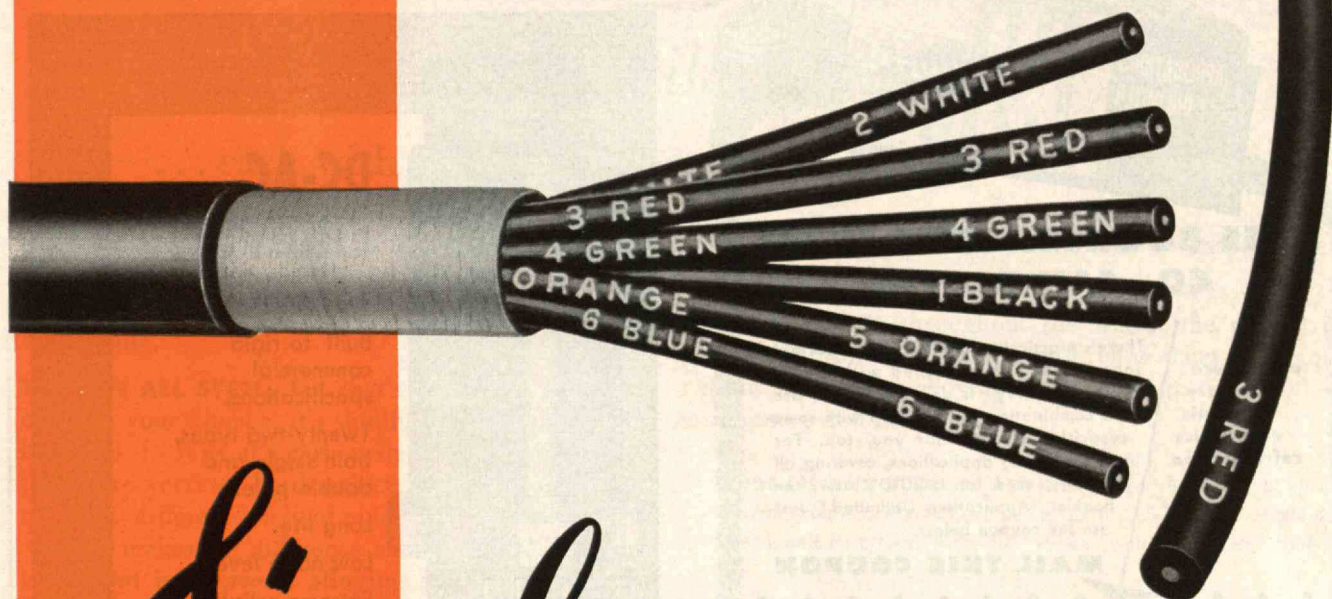
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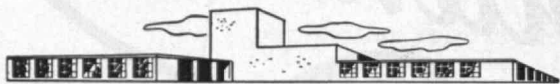


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THE TABULAR VIEW

(Concluded from page 222)

friend and admirer at the M.I.T. Corporation dinner on January 4. The Review is pleased to record the warm tribute (page 235) spoken by ROBERT E. WILSON, '16, chairman of the Board of Standard Oil Company (Indiana), and a life member of the M.I.T. Corporation.

Security Council.—At the January 4 banquet, some 1,550 friends of Technology had opportunity to hear constructive proposals regarding the National Security Council from ROBERT CUTLER, chairman of the Board, and Director of the Old Colony Trust Company, and adviser to President Eisenhower as consultant to the National Security Council. A report on General Cutler's address appears on page 239. An elaboration of General Cutler's banquet address will appear in the April issue of *Foreign Affairs*.

Materials to Order.—Vast possibilities for the design and manufacture of new materials with prescribed physical and electromagnetic properties become possible with sufficiently fundamental approach to nuclear engineering, as related (page 240) by ARTHUR R. VON HIPPEL, Professor of Electrophysics and Director of the Laboratory for Insulation Research. Originally written as a technical report, Dr. von Hippel's article will be featured in the February 24 issue of *Science* as well as in this issue of *The Review*.



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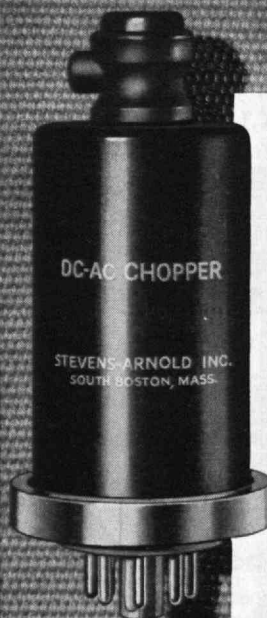
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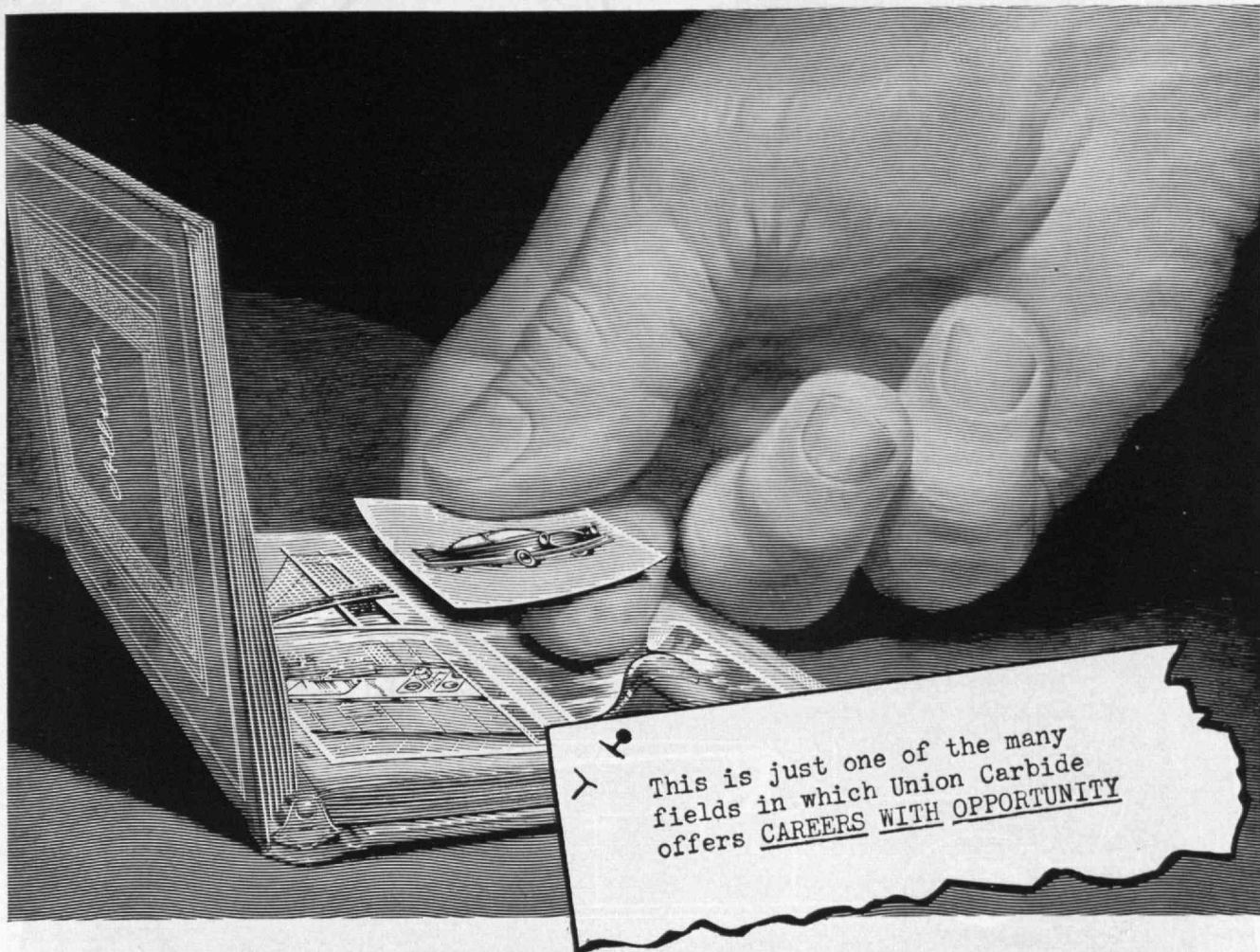
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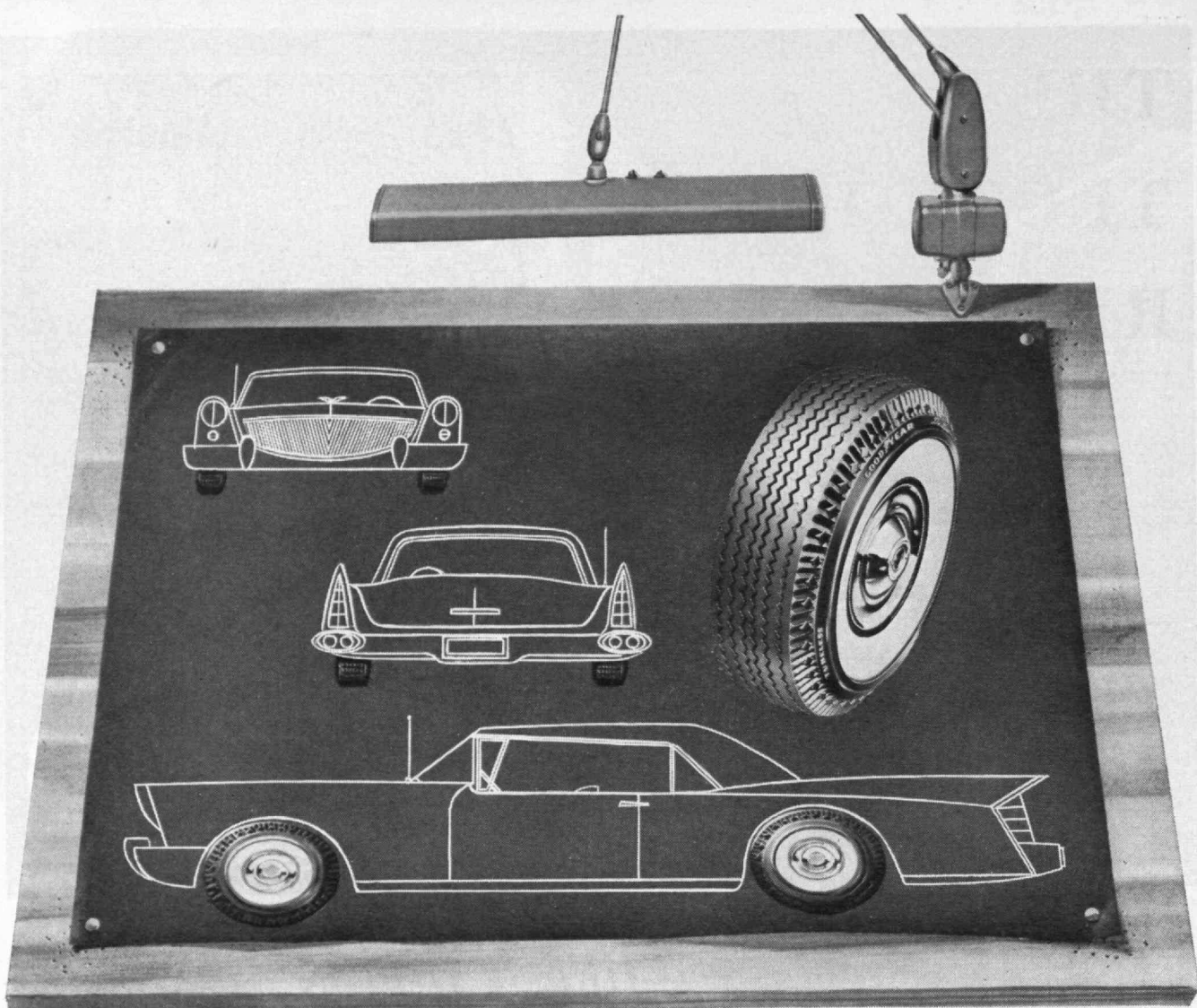
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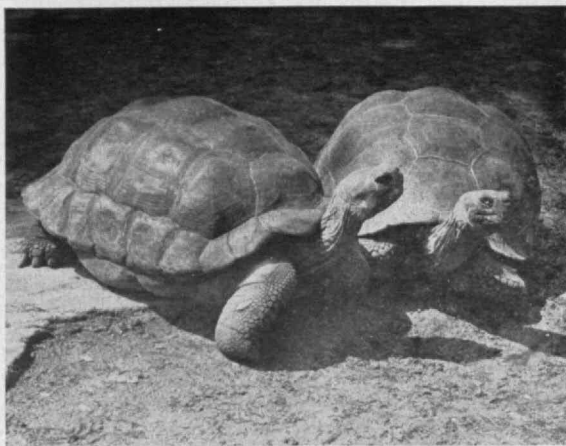


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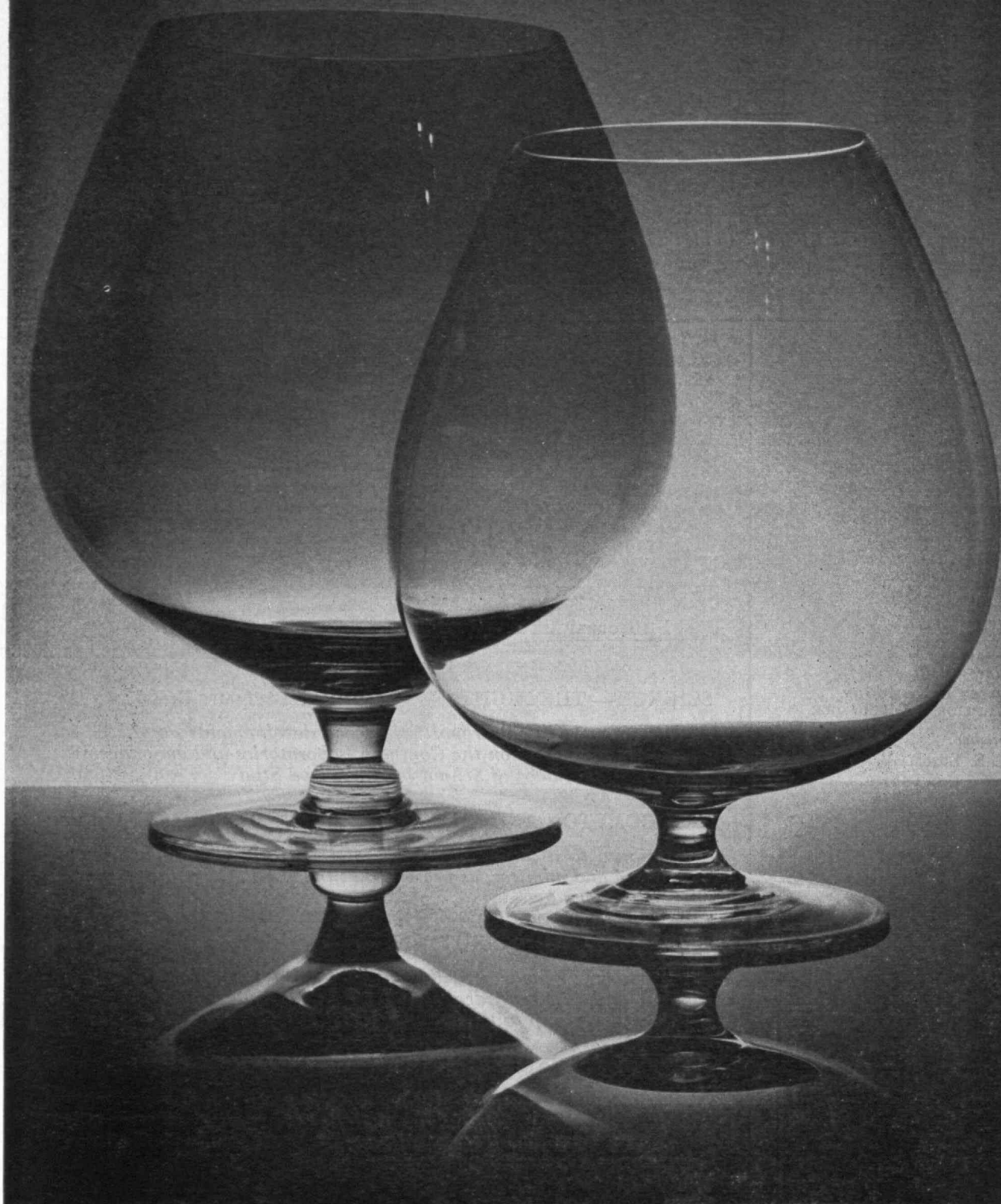
As more is learned about the structure of matter, it becomes possible to design and build materials with prescribed properties, and in increasing degree, to free ourselves from the limitations of naturally occurring substances

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Martin Bovey, Jr.

*"For the glass of the years is brittle
Wherein we gaze for a span."*

— Swinburne

THE TECHNOLOGY REVIEW

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March, 1956

The Trend of Affairs

Domestic Bliss

THE effects of domestication upon animals may be seen from consideration of two well-known domesticated species, the white rat and the human being. Precisely what is meant by domestication? Undomesticated creatures have developed, through evolution, by adaptation of their characteristics to existing environments. But domesticated organisms possess characteristics resulting from human efforts to bring them into adaptation with an environment which at the same time has been modified by human activity. Thus the human being is the agent of domestication; hence man must be considered to be "self-domesticated."

The white rat, widely and usefully employed in laboratory experimentation, is an albino variant of the wild Norway rat. As the wild prototype is plentifully available today, the effects of domestication upon this species may be precisely assessed by comparing the domestic with the feral forms. The albino rat has been under domestication for at least a century. There is a published account of employment of this animal in a laboratory in France in 1856.

Domestication has produced anatomical, physiological and behavioral changes in the rat. The domestic animals' adrenal glands are smaller than those of the wild prototype; also smaller are the liver, spleen, brain, heart, kidneys, and pancreas. The pituitary and thymus glands are larger, the gonads or sex glands develop earlier in the domestic beast.

The domesticated rat has a lower metabolic rate, and lower resistance to poisoning. It is much more subject than the wild animal to fits caused by stress in the form of sudden high-frequency sounds.

Domesticated rats do not utter the high-pitched squeal characteristic of their wild counterparts, especially when frightened. Wild rats in captivity huddle in a close pack in the corner of a cage, and stay there

motionless for hours; the domesticated animals do not do this. Wild rats quickly kill small rats or mice placed in their cages; the domestic rats ignore such smaller companions. If two wild rats in a cage are subjected to an electric shock, they immediately engage in vicious combat. Domesticated rats do not react this way. Perhaps most striking of all differences is the relative reaction to physical restraint. If grasped in the human hand so that little motion is possible, domesticated rats lie quite placid and relaxed. The wild animals, in contrast, apparently find such restraint terrifying; they struggle violently until exhausted, or even until they fall dead.

In short, the wild Norway rat is always alert and ready to defend itself. It is fierce, aggressive and suspicious, always tense, ever-ready to take the initiative in attack. The domesticated albino Norway rat is tame, gentle and trusting, and does not bite unless frightened or hurt.

The effects of domestication upon human beings are harder to assess, as feral man does not exist today as a basis for comparison. Nevertheless it appears to be agreed that some of the anatomical characteristics found among human beings today arose only after domestication occurred; these include long hair on the head, near-hairlessness of the body, curly hair, woolly hair, blonde hair, blue eyes, and fair skin. It is also believed that fundamental changes in the endocrine glands of human beings have resulted from civilization, principally a decrease in the functional importance of the adrenal glands and a corresponding increase in the endocrine activity of the gonads. Such endocrine differences might well be reflected in behavioral differences.

One outstanding result of the human being's self-domestication — civilization if you will — has been the rise of modern medicine and public health. As a result of these developments, inferior variants of the human being arising through mutation, suffering

physical or mental weakness, are kept alive and often given an opportunity to reproduce, thus passing along the adverse characteristics if heritable. In the wild state, to the contrary, organisms suffering adverse mutations usually perish before their characteristics may be passed along to offspring. These facts are a focus of much current concern among some geneticists, because of the acknowledged increase in the incidence of ionizing radiation in the human environment, resulting from experiments with

atomic fission as well as steadily increasing use of ionizing radiation from other sources, such as the x-ray. Such increased radiation must increase the mutation rate; some of these mutations must be unfavorable. Hence there is fear in some quarters that adverse mutations, preserved through the medical and public health measures resulting from man's highly successful self-domestication, may well find full expression generations hence, with disastrous effects upon the human race.

SAGE Aircraft Defense

THE first opportunity to learn about the recently developed electronic Semi-Automatic Ground Environment (SAGE) system for continental air defense and its potential was given the nation's press at a news conference on January 16, at M.I.T.'s Lincoln Laboratory in Lexington, Mass.

Developed by Lincoln scientists and engineers under contract with the United States Air Force, SAGE revolutionizes the air defense methods and equipment involved in the defense of America. The SAGE System makes available to defense personnel

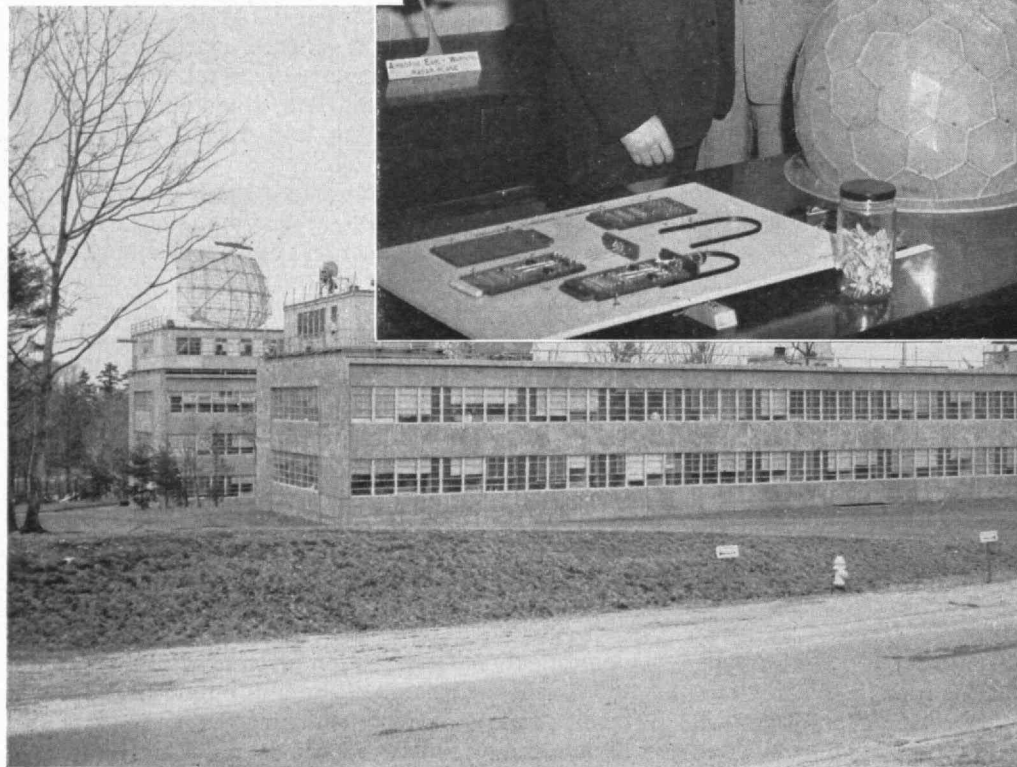
comprehensive and detailed information about enemy air attacks as soon as the outer defense ring is breached. SAGE combines the abilities of the electronic computer to receive information, to memorize, to calculate, and to record answers with the perceptive and display talents of radar to present an instantaneous graphic picture of the location, speed, and direction of all airplanes within radar range. With a knowledge of flight plans of friendly airplanes available in the computer, hostile airplanes can be identified immediately and the most effective defense action taken.

(Continued on page 264)

Right: The SAGE system of continental air defense was disclosed to representatives of the press on January 16. Hosts at this important conference at Lincoln Laboratory were (in usual reading order): Edward L. Cochrane, '20, M.I.T. Vice-president for Industrial and Governmental Relations; George E. Valley, Jr., '35, Associate Director of the Lincoln Laboratory; Major General Raymond Maude, Colonel D. E. Newton, Jr., Commander and Vice-Commander, respectively, of Air Force Cambridge Research Center.



M.I.T. Photos



Left: A portion of the M.I.T. Lincoln Laboratory at Lexington, Mass., where the SAGE system of air defense was developed. Lincoln Laboratory was organized in 1951 at the joint request of the Army, Navy, and Air Force, following announcement of Soviet possession of atomic bombs and long-range bombers.



M.I.T. Photo

Science — The Mighty Multiplier

*Alumni and Friends of M.I.T. Are Told of Progress
at the Institute in a Corporation Dinner Paying
Tribute to Karl Taylor Compton*

By JAMES R. KILLIAN, JR.

OUR purpose in coming together is twofold. First and most important it is an occasion of tribute to Karl Compton. Second, it is an occasion for the M.I.T. Corporation to report on the achievement of certain goals and to express its appreciation for the magnificent support which M.I.T. has been receiving.

In honoring the name of Karl Compton, we express our enduring affection for a superb human being and for a distinguished educator and public servant. A great mountain must be viewed from a distance if we are to perceive its true place in the landscape, and now from a distance we are beginning to perceive even more clearly the great achievements and the shining, comely, towering eminence of Karl Compton. In the cluster of peaks in M.I.T.'s Presidential Range he stands tall with Maclaurin, Walker, and Rogers.

We honor his memory tonight in several ways, with our two distinguished speakers each speaking out of his own experience. In reporting on the stewardship of the M.I.T. Corporation and on the continuing progress and unfolding future of M.I.T., I also pay tribute to Karl Compton by thus giving evidence of the great momentum he gave to the institution and to his happily persistent influence in its affairs. In tribute to him I speak with unabashed pride and enthusiasm of M.I.T.'s progress, its service to the nation, and its sense of manifest destiny as a new kind of university.

An institute of technology stands today in the main current of contemporary life, generating discoveries and ideas, and educating the kind of men which shape our industrial society. The scientist, the engineer, and the manager are among the chief architects of our flourishing technological society, and their responsibility grows steadily greater for its state of health and for its advancement. The professional competence and insight expected of the scientist and engineer, and their understanding of the social forces they affect and are influenced by, all become greater as our society becomes more complex and as our nation assumes greater responsibility and faces greater hazards.

In his provocative book, *The Taming of the Nations*,* F. S. C. Northrop has developed the thesis that American skill in putting nature to work for the benefit of man has given our society and its form of benevolent capitalism a stability and a capacity for growth unique so far to the United States. This technological drive, this powerful combination of science, engineering, and industry which Americans have become so pre-eminently skilled in directing to useful social ends, has been profoundly influential in furthering our ideal of a fluid, classless society. To an extent greater than any other nation, we have discovered that we can wrest from nature a range of

* New York: Macmillan Company, 1952.

benefits that has largely removed the temptation to fall back on ideological nostrums. It is this great generative force of technology that makes science the mighty multiplier and shaper of our society. It is the enormous power of this force which makes it so important that the United States be creative and tautly alert in marshaling all its technological resources to maintain a position of relative strength and of leadership in the free world. In our success in handling the technological measures and countermeasures that now characterize the international contest in which we are engaged may well lie the safety and coherence of the free world and our continuing success in deterring war.

With technology playing this important role in the world today, our institutions where science, engineering, and management are taught have a correspondingly important part to play and must as a consequence be closely meshed with both the immediate and long-term needs of our society. In a period of man-power scarcity they must accept additional educational responsibilities to augment our national scientific man-power resources — a responsibility which requires enhancing quality even more than increasing numbers. In a period of cold war they have a uniquely specialized role in the technology of survival — the survival of ourselves and of the free world. They have a responsibility to further our basic science and to achieve those subtle environmental conditions where the creative mind flourishes best. In a period when society vests a growing responsibility in the scientist and engineer, they have the responsibility of educating these professional men so that they can advance their specialties and at the same time play an important role as perceptive, broad-gauged citizens contributing to the common account. To do this these institutions must achieve new working coalitions of the sciences, the social sciences, and the humanities.

Alfred P. Sloan, Jr., '95 (with glasses), takes active part in pre-dinner discussion with honored guests at the M.I.T. Corporation dinner at the Waldorf-Astoria Hotel.

M.I.T. Photo



Our institutes of technology may well be leading the way to a liberalized liberal education that is relevant to the needs of modern man and modern technological society. A superb opportunity exists to provide a new type of liberal education polarized about science and given new coherence and standards by professional requirements. In our institutes of technology there is a vision of a new kind of indigenous American university built around science and social technology but embracing the arts, the social sciences, and the humanities as essential and equal partners in its corporate aims and culture. The liberal arts cannot be liberal if they misread or hold back science and technology as antihumanistic. By the same test, science and technology cannot fulfill their responsibilities if scientists and engineers lack the humanistic quality once ascribed to the Athenians — the art of making gentle the life of mankind. Our great schools of science and engineering have a special responsibility today to develop new bridges interconnecting the sciences, the social sciences and the humanities, to reduce the protective tariffs of intellectual vested interests, and thus to achieve a liberal education that is liberal in the deepest sense for our American civilization.

These observations on the responsibilities and opportunities of an institute of technology provide appropriate background for my brief report on M.I.T.

In the past 90 years farseeing citizens have created at M.I.T. the nation's largest privately controlled foundation for the support of an institute of technology. Not only does it have the largest resources among all the institutes of technology; it also today stands within the first five among all the privately endowed colleges and universities in the market value of its invested funds. By another measure, its influence and responsibility are shown by the fact that it enrolls the highest percentage of foreign students of any American university and probably has as cosmopolitan a student body as any institution in the world. As a consequence of this position and of the current importance of technology to the United States and the free world, M.I.T. has special responsibilities to respond to the nation's immediate, as well as its long-range, needs and to represent the highest achievable standards in the educational and professional fields it embraces.

During the postwar period, what has been M.I.T.'s response to these requirements? Let me report on only six different ways, all of which reflect the achievements of a dedicated Faculty and Corporation working at concert pitch.

First, in a decade it has almost doubled its enrollment capacity in response to increased demands for scientists, engineers, architects, economists, and graduates trained in management. Year by year during the past decade it has enlarged its facilities, augmented its staff, and added to the scope of its program. In this 10-year period the book value of its plant and invested funds has been increased by over \$47,000,000. Even though we may be unable to accept substantial further enrollment increases, we are now ready and tooled up to make a greater contribution both in numbers and in quality than we did a decade ago, and in the crucial period when the nation's demand for scientists and engineers is greatest.

Fortunately, much of M.I.T.'s increased scope and capacity has come at the graduate level, where the nation's need is the greatest and where the requirements of staff and funds and space are the most demanding. It is important to note that M.I.T. now awards more doctorates in both engineering and physics than any other institution in the United States.

The second important way which M.I.T. has responded to changing needs has been to initiate new programs in research and teaching in response to the widening scope of science and engineering and to adjust for the rapid obsolescence which characterizes modern technology. For the peaceful applications of atomic energy, we have added a graduate course in nuclear engineering and augmented our research in nuclear science. We have organized more than a dozen new laboratories and programs, such as the Research Laboratory of Electronics, the Combustion, Acoustics, Nuclear Science, Gas Turbine, Servomechanisms, Dynamic Analysis and Control, Instrumentation, Cryogenic, Insulation Research, Hydrodynamics, and Aero-elastic Laboratories, and the Supersonic Tunnel and Towing Tank. Notable in recent years has been growth in engineering and science of research important to medicine, psychology, physiology, and the communication of ideas.

At the suggestion of Alfred P. Sloan, Jr., '95, and with resources provided by him, we have organized a new School of Industrial Management which now, after five years of development, has reached the critical size and maturity to become a major new source of ideas and men for management. We seek in this new School to achieve a new synthesis in management education by associating the science of things with the science of man, by combining physical technology with social technology.

To give full recognition to the importance of the humanities and social sciences in an institute of technology, we have established as a formal educational entity a School of Humanities and Social Studies and founded a research Center for International Studies.

Third, our Faculty has been searching for new patterns and new syntheses to enable our curriculum to keep pace with new knowledge and new needs. For example, we have been giving intensive study to a reformulation of the philosophy of engineering education. I can report a growing conviction that the traditional forms of engineering education no longer meet the advancing requirements of industry or reflect the rapid advance of science. Already in several of our engineering departments, notably Electrical Engineering, a new concept of engineering education is emerging and in our judgment is a synthesis more powerful and fundamental than traditional programs in this field.

In the School of Science, we seek to provide optimum conditions for basic research in the pure sciences, including the life sciences, and for educational programs at the highest achievable level. In recognition of the growing interrelationship of the sciences, efforts are being made to eliminate unnecessary barriers set by artificial departmental boundaries.

In our new School of Humanities and Social Studies, we have in effect a first-rate liberal arts college within



M.I.T. Photo

One of the tables on the main floor of the Ballroom of the Waldorf-Astoria Hotel, at the Corporation dinner, January 4.

the framework of an institute of technology. Through it we seek to provide an educational program that brings to the teaching of the humanities and social sciences the same rigorous quality we have in the sciences and engineering. We also seek to round out a new coalition of disciplines which brings the humanist and the social scientist into effective communication and partnership with the physical scientist. We have also just inaugurated a precedent-setting pattern of general education — one of the first to be offered by an institute of technology. This new program introduces both a new type of general education and a new kind of five-year curriculum. Graduates of these curricula will have excellent preparation for such fields as law, medicine, business, and public administration. In particular, the growing demand of government and of industry for men of ability, broadly trained in liberal studies as well as science, will be in part supplied by this plan. A solid grounding in science and technology, without undue specialization, has become an increasingly important prerequisite for men who are to exercise responsible judgment about the affairs of a society such as that in which we live.

Fourth, in the area of student life, M.I.T. in the last decade has largely completed a residential environment for its student body and provided enhanced opportunities for student self-education and for educationally valuable extracurricular activities. With the creative resources of modern architecture it has given new stimulus to community life in the precedent-setting Kresge Auditorium and the M.I.T. Chapel. The devotional Chapel provides for as many as 18 different religious services a week, with each of the major faiths in our student body holding its own services.

Fifth, in this cold-war period we have continued to conduct research for defense and to manage study projects and operations analysis activities which draw upon the best thought of the nation's scientific community for the government. The Lincoln Laboratory and the Instrumentation Laboratory are the largest of several research projects which carry heavy responsibilities for defense. We are now engaged, under contract with the Department of Defense, in reorganizing and enlarging the Weapons Systems Evalu-

ation Group serving the Joint Chiefs of Staff and in bringing together a group of educational institutions to form a nonprofit corporation to manage this important analysis organization in the future.

These are new and abnormal responsibilities for an educational institution which are imposed by the hard necessities of the cold war and our national policy to deter war. An institute of technology which works on the frontiers of engineering, science, and management has an inescapable responsibility thus to serve the nation and to do so in ways that still leave it free and strong and unencumbered in its educational and basic research activities.

Sixth, in the current year we are increasing salaries and other benefits for the academic staff by an amount equivalent to 20 per cent of our total academic salary budget. The major addition has gone into a greatly augmented program of pension benefits. All of this was planned before we had any knowledge of the Ford Foundation grants for salaries. The income to be received by M.I.T. from the \$3,380,000 allotted by the Ford Foundation will be added to these increases. Even with all of these improvements, we still have much more to do to achieve a satisfactory salary scale.

In addition to describing these recent developments and trends, I wish now to report on one great new facility and one important addition to our academic program. During the past 18 months we have developed the plan and raised the funds for the Karl Taylor Compton Laboratories for the physical sciences and, most conclusively of all, we are well under way in their construction. Alfred P. Sloan, Jr., '95, and Marshall B. Dalton, '15, as honorary chairman and chairman of our Corporation Development Committee, have led the way in raising the capital funds required for the construction cost of the memorial laboratories, and in addition, this committee has raised a substantial amount toward the cost of an associated nuclear research reactor to be devoted wholly to the peaceful application of atomic energy, to the education of nuclear scientists and nuclear engineers, and to basic research in nuclear science and technology.

Almost five years ago we held a victory dinner in this same room celebrating the completion of a Development Fund campaign for \$20,000,000 and were able to announce that we had raised \$25,000,000. Tonight is also a victory dinner to mark the raising of

funds adequate to build the Compton Laboratories and in addition to mark the raising of a substantial part of the amount needed for the support of the Compton Laboratories and for the capital cost of the nuclear reactor, which we propose to start during this calendar year.

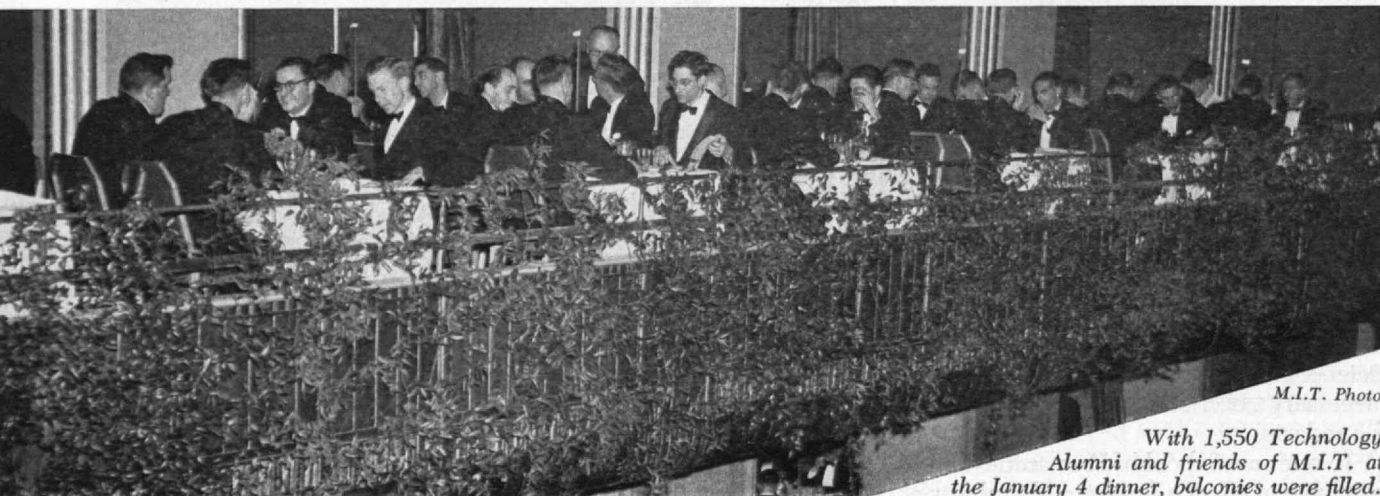
Construction on the Compton Laboratories had hardly been started when we found it necessary to add a new wing to house a great new computing center to be managed by M.I.T. and to be used for aiding basic research and educational activities of the colleges of New England. This concept of a regional laboratory providing a giant computer for educational use was proposed by Thomas J. Watson, Jr., and the center has been made possible by grants and equipment from the International Business Machines Corporation.

The second announcement I wish to make is the recognition of a School for Advanced Study as an integral part of M.I.T.'s academic organization. Today there is an increasing demand for postdoctoral study and research experience in our major scientific institutions. This demand for advanced study in part results from the fact that it now takes about as long to educate a fully professional physicist or chemist as it does a practicing physician. Further, the advance in knowledge makes it increasingly important for scholars to pursue advanced study beyond the level of the graduate school and the doctor's degree. In fact, the advancement of American science particularly requires more postdoctoral study and research in our educational institutions.

Students who already have their doctor's degrees are coming in ever greater numbers to M.I.T. for the purpose of pursuing this kind of advanced study under the guidance of our Faculty. This year approximately 100 postdoctoral fellows and guests are living and working with us at M.I.T.

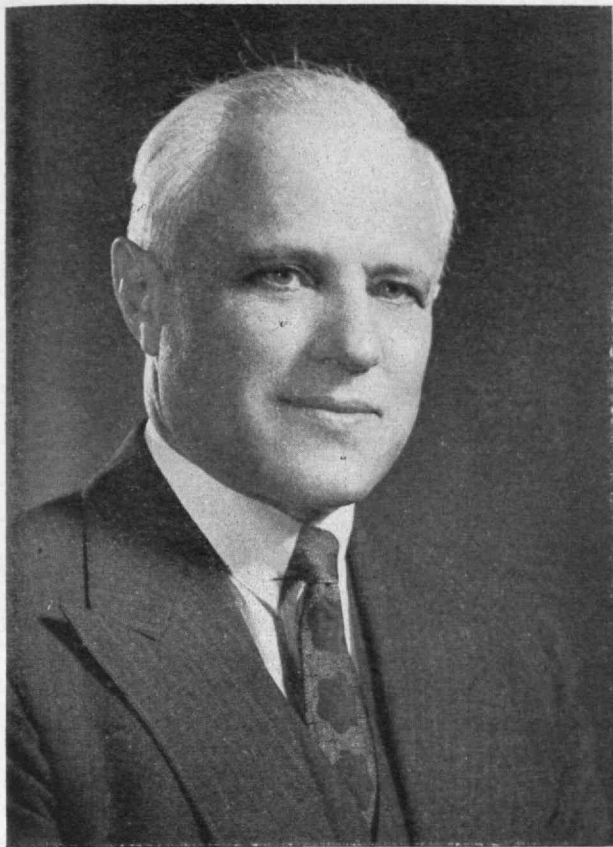
In response to this trend and this need, the Executive Committee of the Corporation has authorized the adoption of a plan suggested by Professor Martin J. Buerger, '24, chairman of the Faculty, for a School for Advanced Study at M.I.T. to provide an organizational base for the growing number of short-term, postdoctoral workers and guests at the Institute. This new entity will give formal recognition to the

(Continued on page 256)



M.I.T. Photo

With 1,550 Technology Alumni and friends of M.I.T. at the January 4 dinner, balconies were filled.



M.I.T. Photo

K. T. Compton

By ROBERT E. WILSON

WHILE I have had the honor of being a student, a research associate, a professor, an alumnus, and a Corporation member of M.I.T. during the past 40 years, none of these would warrant my selection as a speaker on the occasion of this tribute to a great man and a great institution. My one unique qualification for this honor is that I knew Karl Compton for 54 years — much longer, I believe, than anyone else here, except his brother Wilson. It therefore seems fitting that I tell you something of the background of the man — of the home and family whose imprint he always carried with pride and honor — before I relate in later paragraphs the impact of his personality on M.I.T.

I first visited the Compton home, adjacent to the College of Wooster, Ohio, when my father, an alumnus, returned there to become its professor of mathematics. One of the first things he did was to take me over to meet his former instructor, Elias Compton, and his three fine boys, Karl, Wilson, and Arthur. By that time Dr. Compton, a Presbyterian minister, was professor of philosophy and dean of the College, and had been partly responsible for selecting my father for his new post. Karl was then a lively boy of 13, and Arthur, my contemporary, was eight. Throughout my boyhood years Karl was my idol — an outstanding

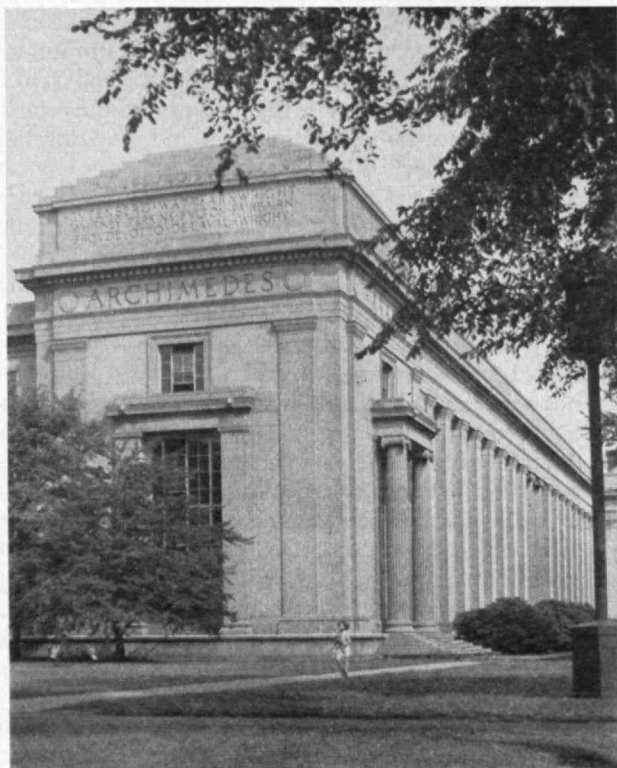
halfback in football, pitcher on the college baseball team, and a top-flight student — though the latter fact seemed rather unimportant to me at the time!

Following his graduation from Wooster in 1908, Karl took a Ph.D. in physics at Princeton. After brief periods as instructor at Wooster and Reed Colleges, he became an outstanding teacher and research worker in physics at Princeton, and a professor in 1915.

Meanwhile, Arthur and I had entered college and had the distinction of founding Wooster's scientific club. Karl was one of our early speakers and inspired both of us to a lifelong interest in research.

After my father's death in 1907, Elias Compton took a fatherly interest in my mother's brood of four children. I particularly recall that in 1914, my senior year, he called on us to urge strongly that I arrange in some way to take postgraduate work in science. I told him of my interest in chemical engineering and my thought that, in view of distance and expense, I should plan to enter a certain Ohio institution. He replied that while it was an excellent school, and could doubtless help to place me in a good technical job in the Middle West, if I wanted to go to the engineering school which was recognized throughout the world as the best, I should go to M.I.T. I have never ceased to wonder at the perspicacity of that advice from a professor of philosophy at a small Ohio college, who had never had any connection with

..... and M.I.T.





M.I.T. Photo

◀ Left: Attending the dinner honoring Dr. Compton, were (in usual reading order): his brother, Wilson M. Compton, economist and administrator; Marshall B. Dalton '15, chairman of the Corporation's Development Committee; and Mrs. Karl T. Compton.

Right, opposite page: ▶ Present on January 4, when announcement was made of M.I.T.'s School for Advanced Study were (from left to right): Professor Martin J. Buerger, '24, director of the new School; Robert Cutler, consultant to the National Security Council; President Killian; and Robert E. Wilson, '16, chairman of the Board, Standard Oil Company (Indiana).

M.I.T. in Boston, and probably never expected to have any!

When I concurred (possibly influenced slightly by the fact that my fiancée lived in Albany, N.Y.) he helped me to get a scholarship and a loan of \$400, which saw me through two years with the aid of summer jobs, tutoring, and so on. Those were the "good old days" for impecunious students!

While in college, my father taught Karl mathematics and his father taught me philosophy. As I have pointed out in introducing Karl, if you will compare my standing as a philosopher with Karl's as a mathematician, you will realize that my father was a much better teacher. Actually, Elias Compton was, in his field, as inspiring a teacher as Karl became in his. And both his father and mother were warm, deeply religious people with a real knack for guiding and inspiring their children. In 1939 Karl Compton's mother was chosen as American Mother of the Year, and only last fall at Wooster the Compton family and I participated in the dedication of a fine new dormitory named for her.

I saw little of Karl or Arthur for several years after graduation, but I did have occasion in 1916 to tell Willis R. Whitney, '90, Director of Research at the General Electric Company, of the wonderful record Karl was making at Princeton, hoping that Dr. Whitney might persuade him to join their laboratory in which I had a summer job. While General Electric did not succeed in hiring him, not many years thereafter they did take him on as a consultant, and that job definitely led to Gerard Swope's ['95] getting to know him and eventually recommending him for selection as our M.I.T. president. And what a fortunate choice that turned out to be!

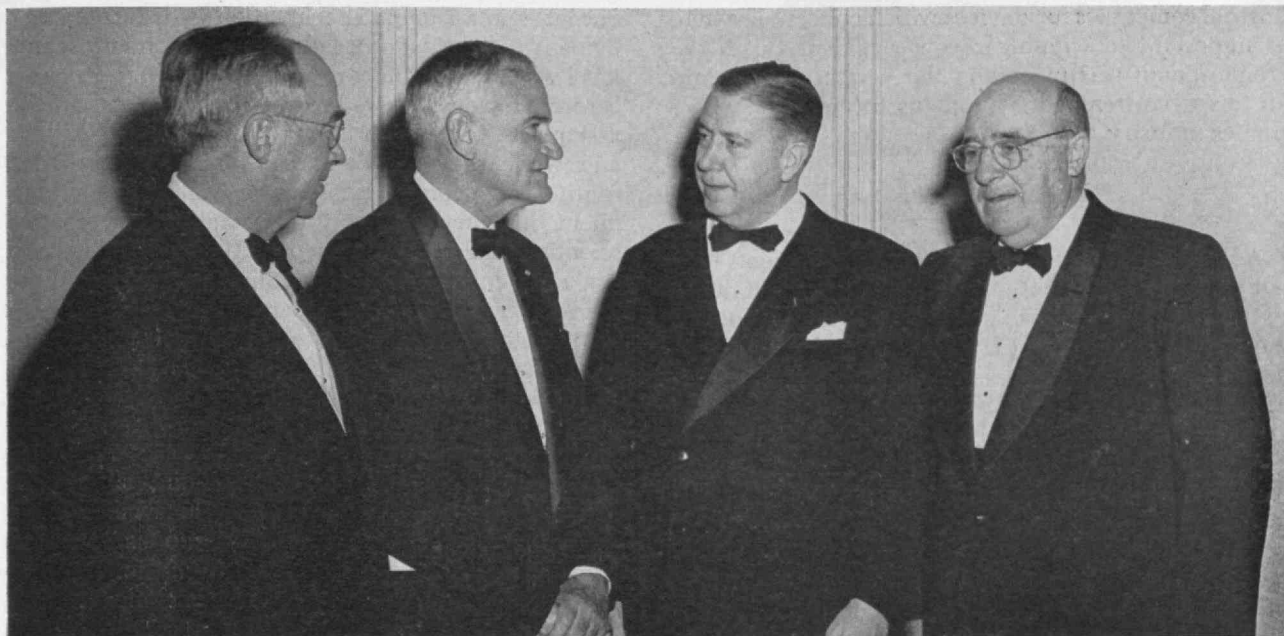
Before continuing with Karl's career, I want to mention another bit of history connecting the Compton family with M.I.T. About 1917, Arthur A. Noyes, '86, Head of Physical Chemistry at M.I.T., became disturbed about the shortage of promising young men in the Physics Department and asked if I could suggest any. I told him about Arthur, then beginning

to make a name for himself at Westinghouse, and wrote a memorandum about him. Dr. Noyes later told me that he had not been able to "make the sale" to the Physics Department, and Arthur eventually went to the University of Chicago, where he soon won the Nobel Prize in physics and eventually became head of the department. I have always believed that the great upsurge in physics at M.I.T. might have started 10 years earlier if Dr. Noyes and I had been better salesmen!

But, in any case, the upsurge came in a hurry when Karl entered the scene. There were some among the Alumni, and possibly among the Faculty, who wondered why a scientist, rather than an engineer, should have been chosen to head the world's greatest engineering school. However, Karl brought just what M.I.T. most needed at that time, namely, a real renaissance of research and graduate teaching in the basic sciences. Without realizing it, M.I.T.'s very pre-eminence in engineering had tended to concentrate emphasis in that direction, letting the science departments function largely as service departments for the undergraduate instruction of engineers. It was consequently difficult to convince top-level scientists that M.I.T. would afford them the kind of climate and opportunity they wanted for graduate teaching and research in basic science.

With the coming of Karl Compton, all that was changed. In quick succession, he recruited men like John C. Slater [Institute Professor and Harry B. Higgins Professor of the Solid State], George R. Harrison [Dean of the School of Science], Robert J. Van de Graaff [Associate Professor of Physics], and Philip M. Morse [Professor of Physics], in physics; Arthur C. Cope [Head of the Department of Chemistry], in chemistry; and Francis O. Schmitt [Institute Professor], in biology — and Technology's rejuvenation of the science departments went forward rapidly.

Time does not suffice to detail the achievements of M.I.T. during Karl's first 10 years, but the rapid growth of outstanding work in basic science was everywhere apparent. Almost as if foreseeing the



M.I.T. Photo

nation's wartime needs, laboratories were set up or expanded to work in the fields of aeronautics, electronics, radioactivity, instruments, servomechanisms, and analogue and digital computers.

In his annual report in 1939, just after the invasion of Poland, Dr. Compton clearly stated the Institute's three great responsibilities: to continue, even in time of danger, to educate "young men versed in science and skilled in the arts of its application to promote human welfare"; to improve its efforts in research for public service; and under "the extreme situation of a struggle for the existence of our country . . . to subordinate our normal educational and research program and place all our facilities at the disposal of the nation with suitable arrangements for their wise use."

In line with this policy, Dr. Compton and dozens of the top men at M.I.T. were drawn more and more into consultation with the defense departments relative to their many scientific problems. Vannevar Bush, '16, and later Jerome C. Hunsaker, '12, headed the National Advisory Committee for Aeronautics. Frank B. Jewett, '03, was throughout the war President of the National Academy of Sciences, charged by law with advising the government on scientific matters.

In 1941, three M.I.T. men — Compton, Bush, and Jewett — together with James B. Conant of Harvard and Isaiah Bowman of Johns Hopkins, decided it was essential that a civilian emergency war research organization should be set up promptly. Bush presented their report to President Roosevelt, who promptly approved it, providing Bush would head it up. Thus emerged, after some intermediate stages, the important office of Scientific Research and Development, and its National Defense Research Committee, in which Dr. Compton, Edward L. Moreland, '07, and many other M.I.T. men played key roles.

It soon became apparent that there was immediate need for a major research and development effort, concentrating on the promising new field of microwaves, to make radar a useful military tool as quickly as possible. Both the armed services and the civilian scientists were insistent that M.I.T. was by far the

best location for such a major program and the M.I.T. Executive Committee went along, though only with some reluctance.

Again, Karl's pre-eminent position as a scientific leader made it possible to attract, and to secure the prompt release of, an amazing assemblage of leading physicists. Let me name a very few:

Lee A. DuBridge, from University of Rochester, now President of California Institute of Technology; Alan T. Waterman, from Yale, now Director of the National Science Foundation; I. I. Rabi, from Columbia, a Nobel Prize winner; Leland J. Haworth, from the University of Illinois, now Director of Brookhaven National Laboratory.

I should add that Alfred L. Loomis, of the M.I.T. Corporation, and Ernest O. Lawrence, of the University of California, were of great assistance to Karl in this recruiting program.

Of course, dozens of the top M.I.T. physicists and other scientists and engineers devoted part or all of their time to the new laboratory. And we must never forget that Karl could not have done a fraction of what he did, for M.I.T. or the war effort, if he had not had James R. Killian, Jr., '26, as his invaluable deputy.

Dr. Compton's ability as an administrator also came into the picture. During the painful period of several months that the government took to unwind the red tape and agree to pay M.I.T. for the work which the defense services insisted must be started immediately, he persuaded John D. Rockefeller, Jr. to underwrite M.I.T. against loss for the major obligations it was assuming. And major they were, for soon the M.I.T. Radiation Laboratory budget was substantially greater than the whole prewar budget of M.I.T.! By the end of World War II it had a scientific staff of 1,200, plus 2,700 other employees.

Again, time does not suffice to detail many important developments in short-wave radar for night fighters, precision gun-guiding radar, and long-range navigation aids. Each development included many parts, and was aided by many other laboratories; each led to production contracts with a host of in-

dustrial companies for devices which collectively were as important in winning the war in Europe as the atomic bomb was in ending the war in Japan. And all this gave tremendous impetus to our whole electronics industry.

M.I.T.'s War Effort

As I have indicated, these many developments cannot properly be attributed mainly to M.I.T., but rather to the great co-operative programs which it helped to guide and house. The M.I.T. war effort also embodied many other important research and teaching assignments, including the radar school, chemical warfare laboratory, and laboratories devoted to the development of many important aircraft instruments, servo-mechanisms, submarine detectors, range table calculators, rockets, guided missiles, operations analyses, bombsights, degaussing ships to make magnetic mines inoperative, food preservation, and literally dozens of other important projects. It would take a book to even outline the story — and that is what John E. Burchard, '23, Dean of the School of Humanities and Social Studies, did in a fascinating 330-page volume entitled *Q.E.D.** Even to skim through, it emphasizes the utter indispensability of M.I.T.'s many contributions, under Karl Compton's guidance, to the war effort. While M.I.T.'s civilian student body was cut by the war to about 35 per cent of normal, its total 1944-1945 budget was 14 times that of 1938-1939! But all of its wartime research was done on a "no profit — no loss" basis.

Throughout the war, brother Arthur H. Compton and another great aggregation of scientists at other locations were, of course, working on the multifarious problems which culminated in the atomic bomb. As that approached fruition, and the problem arose of deciding whether and how to use the bomb, Karl Compton and Dr. Bush were two of the three scientists called upon by Henry L. Stimson, Secretary of War, and the President to help them decide these crucial matters.

The successful outcome of so many of its projects reinforced M.I.T.'s world-wide prestige. Whenever the government wants a really tough scientific job tackled, it is likely to turn first to M.I.T. Karl was, however, one of the first to emphasize that the Institute's primary job was teaching, and that in peacetime it should accept only jobs that fitted in, rather than interfered with, that basic responsibility. The Institute should never become primarily a big government laboratory, however important its work might prove to be.

M.I.T.'s wartime and peacetime accomplishments also led to innumerable calls from foreign nations to help them plan and organize similar scientific institutions. During the last two years of his life Karl carried out such missions for both England and Israel, and gave much of his strength in the process.

You hear much today about Russia's growing quantitative superiority in the number of engineers their schools are turning out, at a time when this country's

* John Burchard, *M.I.T. in World War II — Q.E.D.* (New York: The Technology Press of M.I.T. and John Wiley and Sons, Inc., 1948).

output is in a slump. The situation is disturbing and demands attention, especially at the secondary school level where most young men decide on their probable career. However, there are two bright spots: In the first place, Russia has nothing approaching M.I.T., and while they are doubtless training many good routine engineers and narrow specialists, I am confident that they are not turning out broad, creative scientists and engineers such as M.I.T. and other top American institutions are graduating.

I am reminded of the observation of Harry North who wrote: "If Sir Isaac Newton had been a government economist, we would have no law of gravitation. We would have a continuing study of falling apples with daily, weekly, monthly and yearly reports on the national applefall with graphs, charts, equations, tables and exhibits, showing simple averages, and index numbers by day, week, month, and year, demonstrating to everybody's satisfaction what a fellow can do with an electronic calculator."

To that, I should add the recent observation of Benjamin F. Fairless, President of United States Steel Corporation: "If the apple which fell on Newton's head had happened to fall on a Univac, the machine might have blown a tube, but it would never come up with the law of gravity."

In the second place, it is gratifying to note that of the winners of the recent preliminary tests of several thousand top high school seniors for the National Merit Scholarship program, 44 per cent said they planned to go into science or engineering, and M.I.T. was by far the most popular choice of institution with the entire group sampled.

While I have thus far stressed mainly Karl's scientific contributions, fortunately, as might be expected from his background, he also took a great interest in another relatively neglected area at M.I.T., namely, the humanities. The Division of Humanities was established and both its staff and its basic position in the undergraduate curriculum were greatly strengthened. Someone has remarked that since M.I.T. is now humanizing its scientists, Harvard should undertake to simonize its humanists!

Compton Laboratories

Let us look ahead at some of the continuing results of Karl's fruitful sojourn among us. Even while we were still stunned by his untimely death 18 months ago, members of the M.I.T. Corporation and Administration realized that our number one responsibility was to carry out Karl's vision of a great new laboratory to expand and bring together in permanent quarters the Institute's instruction and research activities in electronics and nuclear science and engineering. Immediately after the memorial services in June, 1954, Alfred P. Sloan, Jr., '95 voiced the hope to Margaret Compton that she would consent to having the new laboratories named after Karl, as they obviously should be, and happily have been. Appropriate to the breadth of the man they are named for, they transcend the once sacred boundaries of the different branches of science and engineering, and emphasize the integrated approach necessary to major progress.

(Continued on page 260)

National Security Council

Alumni Attending Corporation Dinner in New York Hear Recommendations for Strengthening Operation of Important Governmental Agency

As Reported from the Address Made by ROBERT CUTLER

At the M.I.T. Corporation dinner, held at the Waldorf-Astoria Hotel in New York, on January 4, 1956, General Robert Cutler, former Special Assistant to President Eisenhower for National Security Affairs, was the final speaker. His subject, reflecting his experience in operating the National Security Council mechanism for President Eisenhower from January, 1953, to April, 1955, was this: what persons should participate in formulating recommendations concerning national security policy which are to be submitted to the President of the United States for his executive decision?

After describing the emergence of the National Security Council under the present Administration as a mechanism of the Executive Branch of the Federal Government for advising the President on matters of high policy, equal in importance to the Cabinet, he outlined the Council's characteristics, purposes, and functioning. He pointed to the limited statutory membership of the Council (five in all); named the 10 additional officials whose regular attendance at meetings President Eisenhower expected, as members, advisers, or staff; and explained that other officials, whose functions or departments had an interest in a particular agenda item or items, were also invited to attend as *ad hoc* members for such agenda item or items.

General Cutler went on to say that, if the Council were to be the forum for vigorous, searching discussion that President Eisenhower intended, there was a careful balance to be preserved between an attendance that would permit such discussion and an attendance which would turn the assemblage into a "town meeting."

He then dissected the recommendation, often made, for "strengthening the Council," that there be added as regular Council members, a few wise, broad-gauge men, divorced from operating responsibilities. In explaining why he had consistently opposed this concept, he gave as one reason for his position a concern lest the intellectual brilliance of such members coupled with their "free time to think" might tend to dominate the Council discussions. He said:

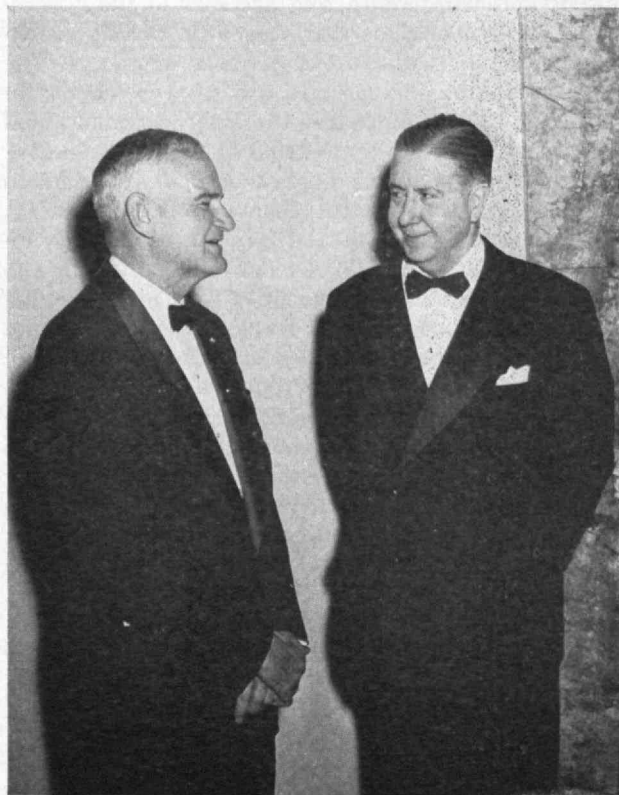
Think of a Compton, a Killian, a Robert Wilson, a James B. Conant (please let me get in *one* plug for Harvard), sitting every week at the Council Table, with nothing to do but think and expound. This concept is truly in the megatron range.

He then outlined his advocacy of the National Security Council seeking "outside" advice and counsel through the appointment of nongovernmental persons, on an *ad hoc* consultant basis, as advisers to the Council. He weighed the pros and cons of

using such consultants, pointing to his experiences with such advisers while he was serving with President Eisenhower. In this connection, he spoke of the Institute's contribution in these words:

Included in these consultant groups were at least two members of your Technology Faculty. Max F. Millikan, Director of Technology's Center for International Studies, headed a group that turned in a reasoned, deeply penetrating study, the concepts of which much influenced the shaping of our basic policy. Later, President Killian chaired a task force of brilliant scientists that put in months of hard thinking in sensitive areas of the greatest consequence to the survival of our American homeland. Never will your President's tact and perseverance shine to a finer advantage than they did in putting together this task force's report. To the President of the United States, as I do here to you tonight, I have paid tribute to Professor Millikan and President Killian for their wise advice in highly troubled times.

General Cutler's address dealt with the substance of a part of an article by him, "The Development of the National Security Council," which is scheduled to appear in the April issue of *Foreign Affairs*.



M.I.T. Photo

Robert Cutler (at left), consultant to the National Security Council, in informal chat with President Killian, just before the M.I.T. Corporation dinner of January 4.

Molecular Engineering

Makes Possible Custom Building of Atoms into

New Materials Having Prescribed Properties

By **ARTHUR R. von HIPPEL**

ENGINEERING, as taught and practiced today, applies the macroscopic and statistical laws of science. Its successes are impressive, as our technical civilization testifies; but, in spite of displayed vigor, the leadership is slipping from the hands of the engineer, because the power of this approach becomes exhausted.

Engineering is based on the proper use of materials. At present, with rare exceptions, such materials are selected and applied by empirical methods. With concepts as to the molecular properties of matter in their infancy, this procedure was the only feasible one. However, about 50 years have now passed since the inception of the quantum theory; physics and chemistry have arrived at quantitative statements about the structure of atoms and molecules and their interaction in gases, liquids, and solids. And yet, visits to engineering laboratories and discussions with contracting agencies of the government make it obvious that very little of this knowledge is alive in the mind of most engineers. The answers to the increasingly excessive demands for materials remain empirical, are slow in coming, and bought in uncertain approaches at an excessive cost. It is time to introduce a more fundamental foundation on which a more powerful technology can be erected.

The transition from the phenomenological approach to matter to a "molecular engineering" has to be pioneered by the universities in a new teaching and research program that forgets about boundaries between departments as well as between schools of science and engineering. It requires generous co-operation of industry; retraining of engineers in summer courses and by postgraduate fellowships; and last, but not least, a modest appraisal of the present capabilities of the new methods in competition with the established ones. In cases of great complexity, empirical experimentation may frequently still reach its goal faster than scientific analysis and synthesis. But the balance of power will shift rapidly to the molecular engineer, as knowledge and experience grow.

Many others in the fields of science and engineering are obviously aware of this situation, as, for example, last year's Conference at the University of Illinois and the Carnegie Institute of Technology testify. The ideas expressed here, based on our experiment at M.I.T., aim to be a modest contribution to a general discussion.

What is molecular engineering? A new mode of thinking about engineering problems. Instead of taking prefabricated materials and trying to devise engineering applications consistent with their macroscopic properties, one builds materials from their atoms and molecules for the purpose at hand. This approach gives the engineer a true spiritual connection to modern science, a partnership and a new freedom of action. He can conceive devices based on ideal characteristics and then, returning to the laboratory, inquire how far such characteristics can be made to order. He can play chess with elementary particles according to prescribed rules until new engineering solutions become apparent. He can be selective by insight, foreseeing inherent limitations of materials and making use of their actual capabilities.

This solving of puzzles on the molecular scale requires the mind to develop a kind of spiritual x-ray machine which perceives behind the macroscopic boundaries of matter its elementary constituents in action. To clarify the procedure, let us assume a technical challenge and outline the response engineering might make in the traditional manner and according to the new mode of thinking.

Airplanes of the future will travel much faster and higher through the atmosphere than today; in consequence, they will heat up by friction to a very uncomfortable temperature, say 1,000 degrees F. Can the metals used in air vehicles now, the fuel serving for their propulsion and the electrical machinery developed for their control, operate safely at such elevated temperatures? Obviously not. Hence a major industrial effort is required comprising all aspects of engineering to translate such an airplane into reality.

A standard approach would be to gather the available macroscopic information, on metals as to tensile strength, on fuels concerning explosion temperatures, on insulators as to electrical failure, on polymers concerning plasticity and decomposition temperatures, and so on. By analyzing such data one would probably find that no performance characteristics have been measured at these high temperatures and under the vibration conditions of modern jet airplanes; that no obtainable material will qualify; but that some trends toward improved materials are discernible. In consequence, test programs evaluating high-temperature performance are initiated under government con-

tracts in various industries; one modification after the other is tried and found wanting; but slowly, by bulldozer tactics, the view is cleared and the goal comes in sight.

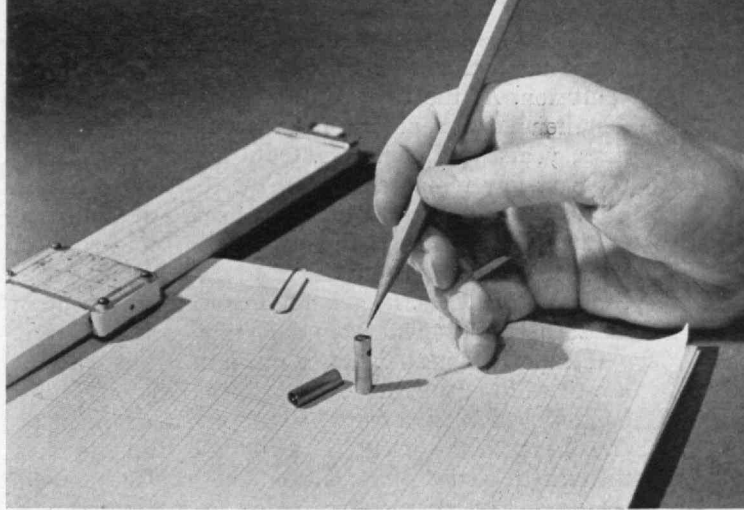
Now, if lost in the woods, we need not level the forest to gain a clear view; we may climb trees and take our bearings. This the molecular engineer would do. He knows about atoms and how they are bound together, from the small diatomic molecules of gases to the ring and chain molecules of chemistry and to the glasses and crystal structures of solid state physics. He can inform himself about the strength of the bonds holding these particles in place and thus evaluate which types of materials might have any chance to qualify at the anticipated high-temperature level. Next, the stability of such materials in the chemical environment found at high altitudes has to be considered; and the choice narrows step by step, as, in addition, mechanical and electrical performance requirements are introduced. Thus, by thinking about the molecular structures of materials and by a few decisive experiments to provide missing data, the possible building stones can be selected from which the required materials might be made.

After this pre-study, a molecular analysis is required of the macroscopic phenomena to be controlled for a safe operation of the aircraft: tensile strength, explosion temperature, electrical failure, plasticity, and whatever else enters. In thinking about such phenomena it becomes clear that what macroscopically appeared as a simple event, measured by a simple test and characterizing material performance by some simple parameters, is actually the outcome of complicated molecular events which may take a variety of courses depending on circumstances. Here lies the main fallacy of macroscopic testing: the belief that a material of the same chemical composition or trade name, subjected to the same test conditions, should give the same result. It frequently does not! For example, the mechanical or electrical strength of materials thus measured varies within such wide limits that only a statistical evaluation can hide the bankruptcy of this test approach.

A scatter of test data beyond the errors of our equipment is a sure indication that the phenomena under investigation contain unrecognized, and therefore uncontrolled, parameters. These parameters are generally of a molecular nature, hence invisible to the classical engineer like the ghosts in Topper's television show. Let us conjure some of them for public scrutiny.

In composing metals, plastics, glasses, and crystals, nature has to set billions upon billions of identical building stones into prescribed patterns. Obviously this requires that only these stones are at hand; but what chemist could prepare his starting materials with that purity. "Chemically pure" reagents contain normally parts per thousand of foreign matter; the starting materials of industry embody several per cent of unwanted constituents; and these extraneous particles have somehow to be accommodated.

How they will be incorporated depends on the method of preparation. For example, if one grows a rock salt crystal slowly over thousands of years, as nature can afford to do, the atoms of sodium and



Nick Lazarnick

Early type of transistor, made possible through recent advances in solid state physics and molecular engineering.

chlorine, because they fit the lattice structure best, are selectively inserted. The foreign matter is pushed along by street-cleaner techniques and now and then discarded in pockets. This method of purification by fractional crystallization, here carried by nature to the extreme, produces a rock salt crystal of great apparent purity, as optical absorption measurements testify. But take the same crystal, heat it to a few hundred degrees and cool it again, and its transparency in the ultraviolet has been greatly impaired. The discard has seeped out of its pockets and the material is now inferior to any crystal grown with reasonable care in a few hours in the laboratory. This is also borne out by conductivity measurements: before heating, the crystal was a very good insulator; after heating, its conductivity has increased by orders of magnitude.

Since we are bound to operate with impure materials, it depends on preparation and requirements how disturbing this fact proves to be. In table salt, impurities in the order of per cents may not matter, but even here, who actually knows? Ailments like cancer might be induced by impurities in our food or in the air we breathe, just as a crystal can be poisoned by the atmosphere in which it grows. Through impurities and their mode of distribution, the prehistory of a material enters as an important variable in critical performance tests.

The influence of prehistory is not limited to the distribution of extraneous matter only. Even ideal purity could not create or maintain an ideal material. In setting endlessly building stones upon building stones, mistakes are bound to occur. Suddenly, here is an extra row of atoms which has to end in a blind edge; there is a hole in the structure we forgot to fill; and over there a row of atoms must be pivoted around a corner. These mistakes, called dislocations, will become more numerous the faster nature works, that is, the higher the temperature. As the result of statistical laws, atoms will be missing from their regular lattice sites with a probability increasing exponentially with temperature, and be misplaced to surfaces or interstitial positions.

In consequence, a material at any temperature level can be characterized by an equilibrium of disorder;

but it takes time to create a predictable amount of confusion. As the temperature is lowered, this time lengthens exponentially from seconds to minutes, days, years, and centuries. Only by creating a material at low temperature can we therefore hope to produce the improved order realizable at that temperature level. This is the secret why "cold rubber" tires are superior to those made by the hot vulcanization process. In general, materials will contain a disorder, "frozen in" from some higher temperature.

If imperfections have to be taken in stride, why not use them to advantage? After all, we pay more for a hand-woven Persian carpet than for a machine-made one, because the irregularities of the former reflect the artistic sense of its maker and replace endless repetition by ingenious variation. A perfect crystal would prove similarly uninteresting. Nonmetals would not conduct or fluoresce, ferromagnetics not show a useful magnetic response, steel could not be hardened, even trees might not grow or life originate in such flawless surroundings. To be sure, perfection has some striking advantages—the mechanical strength of metals, the electrical strength of insulators, and the moral strength of human beings could be raised a hundredfold—but adventures in life and nature arise from imperfections.

Many deviations from perfection occur besides impurities and misplaced lattice points. Electrons and electron defects, for example, may enter a dielectric from the electrodes or be generated in the volume by dissociation. These electrical charges, moving combined with mass particles as ions or striking out on their own with all kinds of velocities and laws of motion, are the active ingredients of our modern electronic devices and will lead to a host of others yet to be invented. They also are the key to such chemical puzzles as: why certain compounds cannot be made in stoichiometric proportions; how colors fade and photographic films operate; how certain catalysts work; and why many tricks of the organic chemist prove to be successful.

Boundaries are imperfections, providing the highways for surface conduction, diffusion, and chemical attack. Filled with intercrystalline cements, they may be the focus of embrittlement by mechanical vibration and chemical transformation; metal fatigue and catastrophic failure results. Boundaries cause heat insulation: a single crystal of quartz conducts heat like iron by passing it on through its lattice vibrations. Disorder destroys the periodicity of motion and scatters these vibrations; hence fragmentation and glass formation leads to the silicate materials that insulate our houses. Special boundaries, the domain walls, impart usefulness to ferroelectrics and ferromagnetics. Motion of these walls by external fields gives us control over the stored electric and magnetic energy and leads to the memory devices on which the success of modern computing machines depends.

There is no end to the variability of the real structure of matter and to the possibilities offered by its control. We have not even mentioned how the elementary building stones themselves, the 90-odd different atoms, can enter the design patterns of materials in endless substitutions, from homeopathic doses of parts per billion required for transistors to

large-scale replacements as in mixed crystals, glasses, and metal alloys. But let us return to our airplane problem and draw some conclusions from this.

Our faith in the beliefs and test procedures of the classical engineer has been shattered. The test data published in the literature are not binding as soon as they concern structure-sensitive properties. A material is not characterized by its chemical composition alone; its prehistory and the detailed arrangement of its building stones enter decisively. Taking apart a material by chemical analysis destroys the clues as effectively as if the police clean up a murder house with soap and water. Engineers have to become detectives, familiar with sensitive nondestructive tools, including x-ray analysis, spectroscopy, electric and magnetic measurements, and the new probing methods of nuclear-, para-, and ferromagnetic resonance.

Phenomena like mechanical strength and metal fatigue, explosion hazard and electrical failure, decomposition of plastics and loss of ferromagnetism, decisive for design considerations of the airplane of the future, are structure sensitive; only molecular analysis will bring them under control. Much of the needed information has been acquired by the scientists, much more is still missing. However, this incompleteness of the art does not give an excuse to let the engineer spend a further generation in the bleachers before he enters the arena. His game is being played now by stand-ins, the physicists and chemists. By enlisting him as an active partner in molecular thinking, we can prevent squandering our resources.

According to our experience, this educational problem is not solved by a few more courses in the science departments. If the physicist, for example, and the author is one of them, talks to an engineering student in typical lingo and aloofness, the information generally passes straight through the skull, ear-in ear-out, without leaving any permanent impression. What we try to create as our answer to this situation, are truly interdepartmental laboratories for molecular science and engineering. The strong foundation is fundamental research, leading into the unknown for the sake of knowledge only. After new knowledge has been acquired, questions can legitimately be asked about its practical implications. Thus, from the first floor of the house, mainly populated by scientists, we reach the second, where one dreams about long-range applications. Finally the problem passes to the top floor for the development of prototypes.

Such a laboratory structure challenges any kind of talent found in schools of science and engineering, from mathematician and theoretical physicist to the wizard of devices. Here the physicist cannot explain away difficulties with impunity; the engineer's prototype does not work and a real answer is required. Here the ceramicist cannot persist in his old-established methods of handling materials. The scientist, inquiring into phenomena of a new order of complexity, sees what single crystals can accomplish and asks why ceramics cannot compete. Here is a feedback between all activities, stimulating thinking and critical appraisal. The modern research tools of science and engineering, when combined in one laboratory, allow a more searching approach from many

(Concluded on page 254)

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

To the Polls!

POSSIBLY as a preliminary for another nationwide election to take place this year, Technology Alumni will get in some early practice this spring when they elect new officers for the Alumni Association, alumni term members on the M.I.T. Corporation, members of the National Nominating Committee, and (for classes whose numerals end in seven or two) class representatives on the Alumni Council. Ballots calling for the election of these officers will be put into the mail on March 24. Counting of ballots will take place on April 25 and the results will appear in the June, 1956, issue of *The Review*.

Nominated to serve as president of the M.I.T. Alumni Association for the year beginning July 1, 1956, is Theodore T. Miller, '22, XV, Vice-president of Dewey and Almy Chemical Company of Cambridge, Mass. — a division of W. R. Grace and Company of New York. Mr. Miller's other achievements and participation in alumni affairs are recorded in the biographical data adjacent to his portrait on this page.

Saxton W. Fletcher, '18, II, has been nominated to serve as vice-president for the two-year term beginning on July 1, 1956. He is president of the J. O. Ross

Engineering Corporation of New York, president and director of Ross Engineering of Canada, Ltd., and also of the Ross Midwest Fulton Corporation, and director of both the John Waldron Corporation and the Columbian Carbon Company. Mr. Fletcher is president of his class, and is an honorary secretary. He was a representative on the Alumni Council from 1949–1954; a member of the Committee on Nominations for Departmental Visiting Committees, 1952–1955; member of the National Nominating Committee, 1952–1955; and president of the M.I.T. Club of New York, 1949–1950. He is a member of the Union League Club, Westchester Hills Golf Club; Scituate Harbor Yacht Club; M.I.T. Club of New York; Scituate Country Club; and the University Club of White Plains.

David W. Skinner, '23, XIV, Vice-president, Assistant General Manager, and Director of the Polaroid Corporation of Cambridge, and Vincent T. Estabrook, '36, XV, Treasurer of Standish, Ayer and McKay, Inc., of Boston, have been nominated by the National Nominating Committee to serve on the Executive Committee of the Alumni Association from mid-1956 to mid-1958.

Members of the National Nominating Committee are: Horatio L. Bond, '23, chairman, Robert C. Erb,

Nominated for Alumni Association Presidency

Presidential nominee for the M.I.T. Alumni Association for the year beginning July 1, 1956, is Theodore T. Miller, '22, XV, Vice-president of Dewey and Almy Chemical Company of Cambridge, Mass., a division of the New York firm of W. R. Grace and Company. Mr. Miller has played an active role in alumni affairs, especially during the past decade. He was alumni member of the Visiting Committee on the Department of Modern Languages, 1947–1951; chairman of the Alumni Day Luncheon Committee, 1952; Alumni Day cochairman, 1953, and chairman in 1954; member of the Executive Committee of the Alumni Association, 1952–1954; member of the Alumni Council since 1950; and chairman of the Alumni Fund Board, 1954–1956, which covers the period of eminently successful fund raising for the Karl Taylor Compton Laboratories. Mr. Miller is also a director of the Boston Fund, and of the Middlesex Products Corporation.

Mr. Miller is a member of the Algonquin Club; Chemists' Club of New York; Essex County Club of Manchester, Mass., of which he was governor in 1949 and president from 1951–1954. He has also been a member of the Planning Council of American Management Association Marketing Division, 1952 to present; American Marketing Association; Commercial Chemical Development Association, and the American Chemical Society.



M.I.T. Photo

Theodore T. Miller, '22, XV

'17, Clayton D. Grover, '22, William S. Brackett, '23, David J. Sullivan, '24, Roger W. Allen, '27, Richard L. Cheney, '27, Morgan Collins, '27, Robert J. Joyce, '28, and Harold Chestnut, '39.

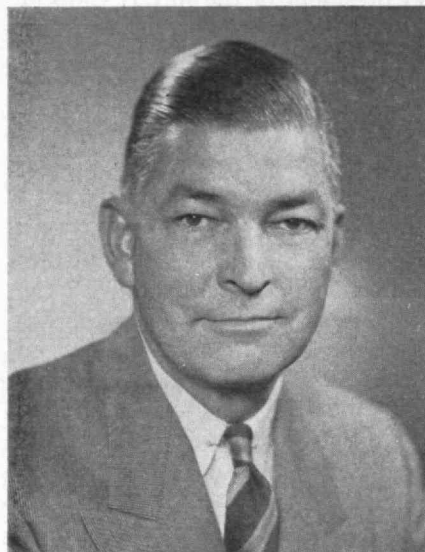
Nominated to serve for five years as alumni term members on the M.I.T. Corporation are: Augustus B. Kinzel, '21, IX-B, Edward J. Hanley, '24, II, and Dwight C. Arnold, '27, XV.

Dr. Kinzel is vice-president of Research, Union Carbide and Carbon Corporation. Mr. Hanley is president and director of the Allegheny Ludlum Steel Corporation, and director of the Duquesne Light Company, Pennsylvania Economy League, and the Allegheny Valley Hospital. Mr. Arnold is presi-

dent and treasurer of the Arnold-Copeland Company, Inc. and director of Stevens-Arnold, Inc., both of South Boston.

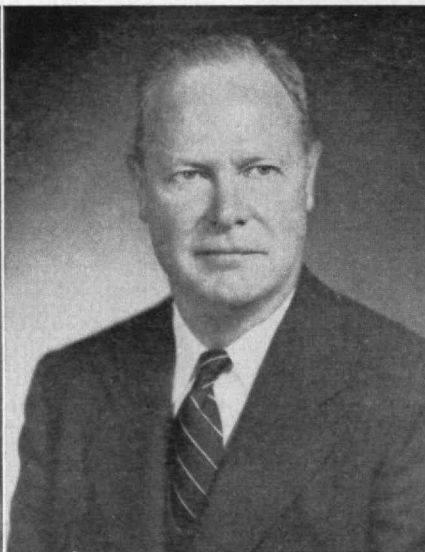
Nominations for representatives on the National Nominating Committee (with one Alumnus to be elected from each of the following Districts) are: *District 8* — Dallas, Fort Worth, Houston — Cecil H. Green, '23, VI-A; Birmingham — Douglas F. Elliott, '24, IX-B; Knoxville — George P. Palo, '28, I; *District 9* — Albuquerque — Max L. Ilfeld, '24, I; Phoenix — Earl L. Bimson, '43, II; *District 10* — Portland, Ore. — Henry S. Mears, '06, III; Manila — J. van H. Whipple, '21, II; Honolulu — Ralph B. Johnson, '27, X.

To Be Elected Alumni Term Members of M.I.T. Corporation



Fabian Bachrach

Dwight C. Arnold, '27, XV



Deakin Studio

Edward J. Hanley, '24, II



Augustus B. Kinzel, '21, IX-B

The trio pictured above have been named nominees to serve a five-year term as alumni term members on the M.I.T. Corporation. Mr. Arnold is president and treasurer of the Arnold-Copeland Company, Inc., and director of Stevens Arnold, Inc., both of South Boston. Mr. Hanley is president and director of the Allegheny Ludlum Steel Corporation of Pittsburgh. Dr. Kinzel is vice-president in charge of research, Union Carbide and Carbon Corporation, New York City.

Council Meeting 314

DWIGHT C. ARNOLD, '27, President of the Alumni Association, opened the 314th meeting of the Alumni Council which was held at the M.I.T. Faculty Club on January 23, 1956, at 7:40 P.M., after dinner, in which 115 members and guests took part. Under items of business it was announced that 14 members of the Institute's staff had paid visits to 23 local clubs between December 1 and January 20, 1956. James R. Killian, Jr., '26, President of the Institute, visited Ottawa; Robert E. Booth, Associate Librarian, visited San Juan; and H. E. Lobdell, '17, Executive Vice-president of the Alumni Association, visited Monterrey, Mexico City, and Havana; all other visits to M.I.T. clubs were within continental United States.

Chenery Salmon, '26, chairman of the Midwinter Meeting Committee, reported that early returns indicated a large turnout for the meeting on February 1 at Walker Memorial, even though many Alumni in

the Greater Boston area had failed to receive their announcements of this meeting. Further details on this gathering appear on page 246 in this section of The Review.

Donald W. Kitchin, '19, chairman of the Alumni Day Committee, announced that the basic plans for Alumni Day, on June 11, will differ considerably from those of past years. The first and major change is that all activities will be held on the M.I.T. campus in Cambridge. A morning conference on the subject of "Science and World Health" is planned, and, as usual, President Killian's report on progress at M.I.T. will be a feature of the luncheon. Afternoon visits to departments and laboratories are planned to supplement and illustrate the morning presentations. The traditional Stein-on-the-Table Banquet of former years will be replaced by a barbeque-type dinner, with service at tables, at which the ladies will join Alumni. No formal addresses are planned at the barbeque banquet to be held in Rockwell Cage.

As chairman of the Alumni Fund Board, Theodore T. Miller, '22, reported that 6,600 Alumni (as of January 23) have contributed \$302,000 as compared to 6,700 Alumni who contributed \$250,000 for the corresponding date in 1955. Of this year's contributions, \$28,000 has been earmarked for scholarships, and \$6,500 for research in the medical sciences. Mr. Miller also announced that the identity of the anonymous donor (whose contributions matched that given by individual Alumni contributions last year) would be revealed at the Midwinter Meeting on February 1.

Dr. James H. Means, '06, formerly Chief of Medical Services at the Massachusetts General Hospital from 1924 to 1951, and since then consulting physician in the M.I.T. Medical Department, then introduced the first speaker of the evening — Dr. James M. Faulkner, Director of the Institute's Medical Department. Dr. Faulkner spoke on the Institute's Faculty Health Survey and of its Occupational Medical Service.

The purpose of the Faculty Health Survey is to enable the members of the Institute's Faculty to carry on their very active loads with the least interruption for reasons of health. Among 267 members who first took advantage of this survey, 295 disorders were found by the Medical Department. Some of these had been known and most were not serious. The group of 267 participating in this program of preventive medicine has now grown to 350 Faculty members, and groups in this program have volunteered to serve as test subjects in current medical research.

Dr. Faulkner's report on the Occupational Medical Service brought up to date the work reported in the April, 1953, issue of *The Review* by Dr. Harriet L. Hardy.

Final speaker of the evening was T. William Lambe, 2-44, Associate Professor of Soil Mechanics, who described two engineering projects where practical use had been made of research work conducted by the Institute's Soil Stabilization Laboratory.

The Mona Reservoir, near Kingston, Jamaica, B.W.I., had a capacity of 700,000,000 gallons and covered more than 70 acres. When put to use in 1947 to store water from the Hope River it leaked so badly that it was abandoned. By cleaning the bottom of the reservoir of stones and vegetation, spreading a one-inch layer of clay and about 140 tons of chemical on the surface, a new bottom was built for the reservoir which has proved to be entirely practical.

Another project that Professor Lambe described was a fuel oil storage reservoir owned by Creole Petroleum Corporation in Venezuela. The crude oil is refined into gasoline which has a rapid, steady market, but fuel oil, which can be sold in the fall and winter, must be stored in spring and summer. Steel storage tanks in Venezuela cost about \$1.25 per barrel. Creole originally considered a concrete-lined reservoir, but during a symposium at M.I.T. in the fall of 1954, representatives heard of the Institute's Soil Stabilization experiments. The final fuel oil reservoir covers 15 acres and holds 4,000,000 barrels of oil. It was completed in two months for less than one-fifth the cost of steel tanks with apparently no leakage. Creole is designing another such reservoir and is planning to double the height of the dam for this reservoir.

School for Advanced Study

ESTABLISHMENT of a School for Advanced Study providing means by which post-doctoral scholars from all over the world can join with the M.I.T. Faculty in high-level theoretical studies and research was announced on January 4, 1956, by James R. Killian, Jr., '26, President. The announcement was made at a dinner at the Waldorf-Astoria given by the M.I.T. Corporation for 1,550 guests, including many Alumni. Martin J. Buerger, '24, Professor of Mineralogy and Crystallography, has been appointed director of the new School which will formalize opportunities for advanced study which are already available at M.I.T., Dr. Killian said.

In its initial embodiment the School will be simply an organizational entity, but it is hoped ultimately to provide a center and adequate housing for fellows and guests. Scholars who are invited to M.I.T. for advanced study will have the status of "fellows" in the School. This year there have been approximately 100 such people from 15 countries, studying at the Institute and they have been registered as "guests" or "visiting fellows."

Dr. Buerger said that ordinarily visiting scholars do not enroll in courses or seek degrees, and M.I.T. has not asked them to pay tuition. The majority are supported by fellowships or grants, and, he added:

We welcome such scholars and believe we can be of greater help to them by establishing the new School. Much can be gained in science and engineering through the interchange of ideas. Close association and intimate discussion between men in the same field of research, or in different fields, can be productive of new insights.

By establishing a school, we will be able to bring the scholars closer together and closer to members of our own Faculty. Special programs can be arranged for them and arrangements can be made for them to meet in informal conferences. Plans for a special on-campus housing unit for visiting scholars are being considered.

The school will be similar in its objectives to the Institute for Advanced Studies at Princeton, but the Princeton center has a permanent staff of some size. Unlike the Princeton School, the M.I.T. School for Advanced Study will be an integral part of the Institute, and constitute an extension of the level of the programs of the Undergraduate and Graduate Schools.

Dr. Buerger, who will assume the office of director on July 1, 1956, has been at the Institute since 1920, when he came as a student. He has been on the staff since 1925 when he was appointed a teaching fellow. He became a full professor in the Department of Geology in 1944 and is now chairman of the Institute Faculty.

A native of Detroit, Dr. Buerger attended Morris High School in New York City before entering M.I.T. He was awarded a Ph.D. in 1929. He is widely known for his studies in theoretical mineralogy and has been active in the development of new theories of crystal structure analysis. He is a member of the National Academy of Sciences, former president of the Mineralogical Society of America and is a member of the National Research Council committees on solids and crystallography.

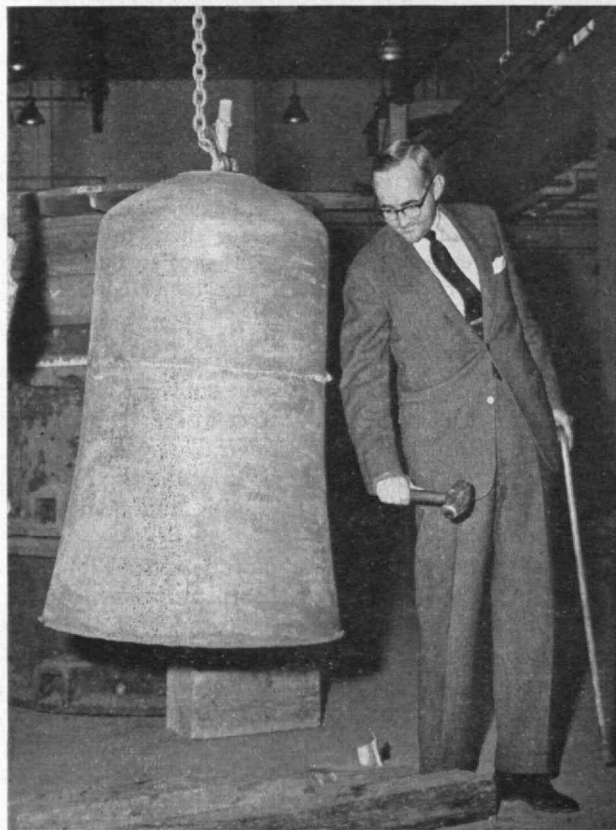
Western Regional Conference

WEST Coast Alumni will have opportunity to visit with distinguished members of the Institute's Faculty and Administration on Saturday, March 17, when the Western Regional Conference is scheduled to be held at the Hotel Ambassador in Los Angeles.

On the general theme of "The Impact of Today's Technology" the following addresses will be given: "Frontiers of Science" by George R. Harrison, Dean of the School of Science; "The Nuclear Reactor as a Tool for Research and Industry" by Theos J. Thompson, Associate Professor of Nuclear Engineering; "Aeronautics' Current Technical Challenges" by H. Guyford Stever, recently named Associate Dean of the School of Engineering; and "Today's Plans for Tomorrow's Management" by E. P. Brooks, '17, Dean of the School of Industrial Management.

Julius A. Stratton, '23, Vice-president and Provost, will speak on government-sponsored research at M.I.T. at the luncheon, and James R. Killian, Jr., '26, President, will speak of recent progress made at the Institute as part of the banquet program.

Further information may be obtained from William H. MacCallum, '24, Modern Talking Picture Service, Inc., 612 South Flower Street, Los Angeles 17, Calif.



M.I.T. Photo

Recently erected in the tower of the M.I.T. Chapel is this bell of unusual shape which is being struck by Howard F. Taylor, 2-46, Professor of Metallurgy. The bell was cast in the Institute's Metals Processing Laboratory under the direction of Professor Taylor. Designed by Theodore J. Roszak, the bell and its containing tower have evoked much comment.

"Mr. X" Revealed at Midwinter Meeting

THE mysterious "Mr. X," who offered to match, dollar for dollar, contributions of M.I.T. Alumni to the 1955 Alumni Fund, was identified as Alfred P. Sloan, Jr., '95, chairman of the Board of General Motors Corporation and life member of the M.I.T. Corporation. One of the Institute's greatest benefactors, Mr. Sloan contributed \$515,000 to match an equal amount given by Technology Alumni. With other sums voted by the Alumni Fund Board, contributions for the 1955 Alumni Fund reached \$1,215,000.

The announcement was made on February 1 at the Midwinter Meeting of 700 Technology Alumni at Walker Memorial, by Dwight C. Arnold, '27, President of the Alumni Association. Speaking for Theodore T. Miller, '22, chairman of the 1955 Alumni Fund Board, and who was unable to be present, Mr. Arnold read Mr. Miller's report, in part, as follows:

You are all familiar with Mr. Sloan's other benefactions through the years. Many of them were greater in amount, but few if any had the impact of this one. Why did he make this dramatic offer? May I tell you in his own words:

"The M.I.T. Alumni should feel very proud of their contributions to the Karl Taylor Compton Laboratories. It has been a privilege for me to share with other Alumni in making possible this permanent and most fitting memorial to a truly great man. The steady growth of our Alumni Fund demonstrates real confidence and faith in the future of the Institute under Dr. Killian's bold and imaginative leadership. The expanding opportunities in science, engineering, and management, which M.I.T. is exploiting with vigor, foretell great advances which will augment our economic strength, help conquer disease, and improve our general welfare."

We, his fellow Alumni, owe Mr. Sloan a debt of gratitude for his outstanding example and challenge. We, the Alumni who are charged with the operation of our Fund, are grateful to you for the way in which you have met that challenge. Your response was worthy of the man whose name we honored — Karl Taylor Compton.

Those who attended the Midwinter Meeting heard words of welcome from Joseph J. Snyder, 2-44, Vice-president and Treasurer, speaking on behalf of President Killian who was in Washington. Mr. Snyder commented on the gift of George Eastman, which made it possible for M.I.T. to move to Cambridge, mentioned the Compton Computer Center (See February Review, page 201), and spoke briefly of a life income plan which is being considered for Alumni and friends of the Institute.

The major portion of the Midwinter Meeting was devoted to a panel discussion of "What Science Has in Store for You." John E. Burchard, '23, Dean of the School of Humanities and Social Studies, served as moderator of the panel of experts which included: Holt Ashley, '48, Associate Professor of Aeronautical Engineering; Hoyt C. Hottel, '24, Professor of Fuel Engineering; Samuel A. Goldblith, '40, Associate Professor of Food Technology; Jerome B. Wiesner, Professor of Electrical Engineering; and Eli Shapiro,

(Continued on page 248)

Tube-In-Strip



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Faculty members outlined the progress they fore-saw as possibilities within the next half century in the fields of aviation, energy uses, food-processing methods, and in the very broad field of electronics and communication. Although highly interesting, the predictions of the "experts" represented their personal views and were "off the record."

The evening was climaxed by the first general showing, to Alumni, of the Lincoln Laboratory's recently completed film on the SAGE system of continental air defense, mentioned on page 230 of this issue of The Review.

Architecture and Planning

ON March 5, 1955, Members of the Visiting Committee on the School of Architecture and Planning met at M.I.T. to review the progress made by the School under the guidance of Pietro Belluschi, Dean.* In addition to William T. Aldrich,

* Members of this Committee for 1954-1955 were: William Emerson, chairman, William T. Aldrich, '01, Samuel A. Marx, '07, Kenneth Franzheim, '13, Thomas D'A. Brophy, '16, Louis H. Skidmore, '23, Carl L. Feiss, '38, Richard M. Bennett, Walter A. Gropius, and George A. Sloan (deceased).

'01, Richard M. Bennett, Kenneth Franzheim, '13, Louis H. Skidmore, '23, and William Emerson — all members of the Visiting Committee — members of the Institute staff who attended this meeting included: James R. Killian, Jr., '26, President of M.I.T.; Dean Belluschi; Robert M. Kimball, '33, Secretary of the Institute; Professor Lawrence B. Anderson, '30, Head of the Department of Architecture; and Professor Frederick J. Adams, Head of the Department of City and Regional Planning.

Dean Belluschi explained that the School was now operating for the first time under a new curriculum that provided greater flexibility of choice of electives on the part of students. The School has special facilities in the fine arts which are being used to increasing extent as electives by students in the Humanities program. The development of visual design teaching at the graduate level helps to balance the highly technical aspects of the architects' curriculum by developing appreciation of the expressive or decorative arts.

In the spring of 1956 an elective entitled "Structure of the City" will be offered. This course will deal with the physical environment of the modern American city, using the historical development and contemporary problems of Greater Boston for illustrative purposes.

Although no major changes in the program of instruction in City and Regional Planning had occurred during the year, Professor Adams announced that collaboration has been established with the

(Continued on page 250)

LANGUAGE, THOUGHT, AND REALITY

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Edited and with an introduction by John B. Carroll

foreword by Stuart Chase

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Once in a blue moon a man comes along who grasps the relationship between events which have hitherto seemed quite separate, and gives mankind a new dimension of knowledge. Einstein, demonstrating the relativity of space and time, was such a man. In another field and on a less cosmic level, Benjamin Lee Whorf was one, to rank some day perhaps with such great social scientists as Franz Boas and William James.

He grasped the relationship between human language and human thinking, how language indeed can shape our innermost thoughts. — Stuart Chase

Whorf's memorable Technology Review essays as well as important hitherto unpublished papers are included in this significant volume now just issued by John Wiley and Sons, Inc. and

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Harvard Graduate School of Design in giving an annual housing seminar, and also with the Harvard Law School in offering a seminar on urban land policy in underdeveloped countries, both of which are proposed for the 1955-1956 season. Research projects under way include one (for a five-year period) on Principles and Methods of Analyzing Resource Problems, and one on the architectural resources of the building industry. In addition, a special summer program is undertaken jointly with the Course in Building Engineering and Construction on the use of plastics in the design of building products.

The continuing demand for qualified graduates in City and Regional Planning far exceeds the present output. Professor Adams stated that a program leading to a doctor's degree should help to overcome this shortage by attracting first-rate students.

Dean Belluschi announced that the Bemis Fund would be used to encourage creative work by professional architects of outstanding ability who would serve as visiting professors with tenure of from several weeks to a year.

The professional background of the School's Faculty and staff covers a wide range, from training in economics and visual design to land-use planning. The Committee expressed general approval of the School's educational and research activities. It also strongly recommends that a grant be made to the School to enable Dean Belluschi to publish a booklet explanatory of the School's goals and accomplishments.

The report of the Visiting Committee, which has been summarized above, was reviewed at the June 10, 1955, meeting of the M.I.T. Corporation and the October 21 meeting of the Executive Committee, and was received for publication in The Review on November 8.

Course I Review

IN a two-day session on April 17 and 18, 1955, members of the Department of Civil and Sanitary Engineering met with members of the Department's Visiting Committee.* All members of the Committee were present except William V. McMenimen, '03, Howard H. McClintic, Jr., '19, and James H. Stratton. The Institute's Administration was represented by: James R. Killian, Jr., '26, President; C. Richard Soderberg, '20, Dean of the School of Engineering; and Robert M. Kimball, '33, Secretary.

Student enrollment appears to have become a problem. Figures presented show a declining under-

(Concluded on page 252)

* Members of this Committee for 1954-1955 were: Alfred T. Glassett, '20, chairman, William V. McMenimen, '03, William J. Orchard, '11, Howard H. McClintic, Jr., '19, Horatio L. Bond, '23, Philip C. Rutledge, '33, Wesley W. Horner, John N. Kyle, Henry R. Shepley, and James H. Stratton.

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**From an address to
the American Society
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THE INSTITUTE GAZETTE

(Concluded from page 250)

graduate student interest in the field. The problem appears to be a real one and the Committee feels that the educational experiment recommended later in this report might well help toward a solution. Enrollment in the Graduate School continues in substantial numbers and no problem is apparent at that level.

It was very satisfying to the Committee to find that the volume of research work is standing up very well and that the programs themselves appear to be very effective, not only as research projects but as Graduate School instruction.

A new undergraduate curriculum in Civil Engineering, in which the undergraduate course in Building Engineering and Construction has been completely integrated with that of Civil Engineering, was discussed. It appeared to the Committee that the new course had been well planned and effectively organized. The course has been given this fall for the first time.

Considerable attention was given to a new approach to undergraduate teaching of Civil Engineering which was proposed by Professor John B. Wilbur, '26, Head of the Department. The philosophy underlying Dr. Wilbur's suggested approach might well be applicable to all undergraduate engineering training, and is completely developed in Dr. Wilbur's article "The Limitations of Logic in Engineering Educa-

tion" which appeared in the March, 1955, issue of The Review. Basically, his theory is that students should begin taking professional subjects in their freshman year as a means of more effectively developing their ability to think for themselves, and to develop a better understanding of the engineering sciences to be taught in parallel with the professional subjects. Much planning and preliminary work would be required to initiate such an educational plan, and the cost of establishing such a program (which would not be recurrent, however) might be \$250,000 or more. Under Dr. Wilbur's plan, even the freshman students would be taught by Faculty members in the Department of Civil and Sanitary Engineering who should be carefully selected for their ability to deal with entering college students.

In the opinion of the Visiting Committee the new educational program outlined above appears to be a very promising innovation and the Committee recommends, subject to ironing out of details for the course by the members of the Department and also subject to a solution of the financial problems involved, that a tryout of this system on a partial scale should be made. The Committee believes that this program would help make better engineers and would improve the standing of our Course in Civil Engineering as compared with those of other colleges.

The report of the Visiting Committee was studied by the M.I.T. Corporation at its meeting on October 3, 1955, and by the Institute's Executive Committee on October 21. The report was transmitted to The Review for publication on November 8, 1955.

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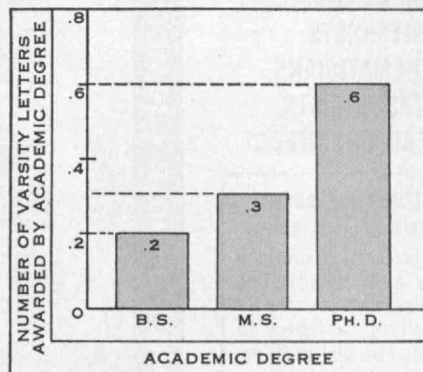
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Brain and Brawn

Some of the young fellows on our staff have been analyzing our files of personal data regarding scientists and engineers here at Hughes. What group characteristics would be found?

With additional facts cheerfully contributed by their colleagues they have come up with a score of relationships—some amusing, some quite surprising. We shall chart the most interesting results for you in this series.



Contrary to popular belief, higher academic study goes hand in hand with increased school athletic activity—as shown in the above chart. This is based on data obtained from a 20% random sample of the 2400 professional engineers and scientists of Hughes Research and Development Laboratories.

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MOLECULAR ENGINEERING

(Concluded from page 242)

angles, and the specialists able to handle them work as allies. There is no excuse for doctorate students to remain narrow minded; their research problem fits into a broad context and may be pursued with any promising tool of any discipline.

This effort can succeed only if the over-all problems attacked are broad and challenging, and if the staff members have full freedom in their individual research and receive full credit for their contributions. The Laboratory for Insulation Research has been built up since 1937 as a pioneering test case. Its present staff consists of physicists, chemists, electrical engineers, and ceramicists; we hope to form an alliance with mechanical and chemical engineers, metallurgists, and biologists, as experience and confidence grow. The name of the Laboratory is somewhat misleading; it was originally chosen to emphasize connection with problems of the electrical engineer. However, there exists no true "insulation," either in electrical equipment or in human affairs. Any material can be made to conduct electricity; and the generation, motion, and control of charge carriers in gases, liquids, and solids, with all transitions from insulators to metals is one of our broad fields of interest. Other long-range projects concern the origin and action of electric and magnetic moments, from individual electron clouds and nuclei to the cases of extreme coupling, the ferroelectrics and ferromagnetics. We try to contribute to the fundamental understanding of the electric and magnetic properties of matter and to their application in devices.

If laboratories for Molecular Science and Engineering are established on a broader scale and their aims supported by teaching on an interdepartmental level, does this solve the problem of government and industry to learn and apply with dispatch the concepts of molecular engineering? Obviously, the students thus educated will make their impact, but only gradually. Summer-session courses* and postgraduate fellowships have to be added, bringing promising men back from industry to the universities for days or a year of unhampered study as co-workers in these challenging laboratories. Returning to their organizations they will spread the new comradeship and understanding co-operation between science and engineering in molecular thinking.

*A 10-day course in "Molecular Engineering" will be offered at M.I.T. in the Summer Session of 1956.

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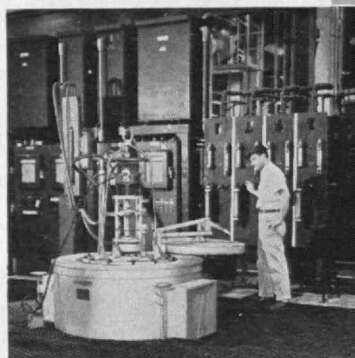
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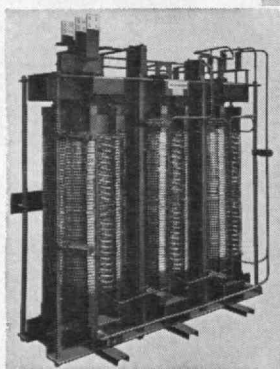


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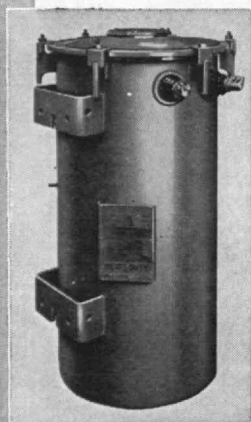
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SCIENCE — THE MIGHTY MULTIPLIER

(Continued from page 234)

importance of postdoctoral students and to the contributions from such students and scholars to the advancement of science and technology, and will serve to relate them more closely to our corporate life.

In its initial embodiment, the School will be simply an organizational entity, but we hope ultimately to provide a center for visiting fellows and guests and by this means to gain the advantage of cross-stimulation of ideas which always occurs when learned and ingenious men are brought together into close social contact. Professor Buerger has accepted appointment as Director of the School for Advanced Study and also the appointment as an Institute Professor.

Tribute

I wish finally to record the major part played by two members of our Corporation in making it possible for M.I.T. to achieve or undertake these things. The first is Mr. Sloan. In addition to his responsibilities as the principal architect and senior statesman of one of the great industrial institutions of our society, Mr. Sloan has lately given major attention and energy to the creation, promotion, and strengthening of non-profit institutions and programs devoted to the public welfare, especially in the fields of science and management — the Sloan-Kettering Institute for Cancer Research, the Alfred P. Sloan Foundation, the Fund for Basic Research, the School of Industrial Management at M.I.T., and M.I.T. itself. All have been major beneficiaries of his wisdom, his ideas, and his generosity. I would salute him tonight as one of the major figures in the development of M.I.T. and a philanthropist who joins generosity with wisdom. The second person is Marshall B. Dalton, '15, who for the past decade has served as chairman of the M.I.T. Corporation Development Committee and as a member of the Institute's Executive Committee. Under his bold and unflagging leadership the funds have been secured to enhance the scope and the service of the Institute in the ways I have briefly outlined. This dinner, marking another milestone in the augmentation of the Institute's resources, is a fitting time to recognize the boldness, the dedication, and the devotion of Mr. Dalton. Both of these Alumni

(Concluded on page 258)

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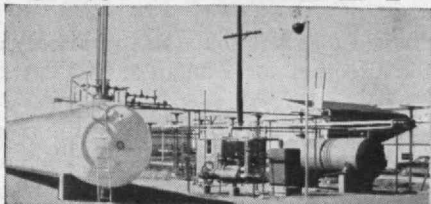
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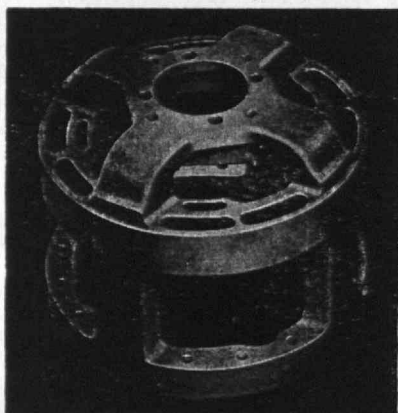
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SCIENCE — THE MIGHTY MULTIPLIER

(Concluded from page 256)

have achieved a secure place in the history of M.I.T. and in the affection and esteem of M.I.T. men everywhere.

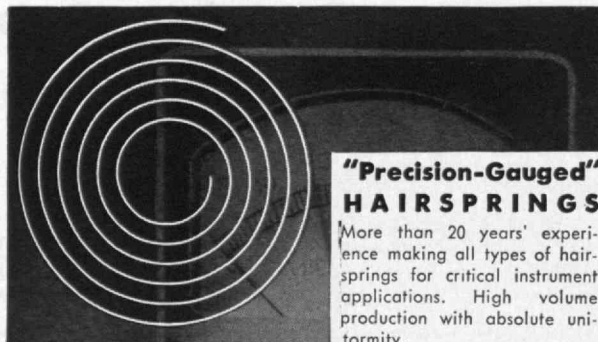
In addition to these two, there are the members of the Alumni Fund Board and the class agents, many of whom are here tonight. Along with Theodore T. Miller, '22, the chairman of the Alumni Fund Board, I salute them for adding \$1,000,000 to our fund for Karl Compton's memorial.

During the past 10 years, with the help of these people and the members of the entire Corporation and Faculty, M.I.T. has received in cash or funds committed for it for both capital and current use \$62,000,000. This is a princely sum, and I want tonight to thank our friends and supporters across the nation for their confidence, their faith, and their generosity.

Fiscal Footnote

I also want to add a fiscal footnote such as we frequently see on operating statements. The dollar ain't what she used to be. What was a million dollars 10 years ago represents in purchasing power only a half-million dollars today. In approximately doubling its assets in dollars along with nearly doubling its student body, we have not maintained our purchasing power per student. Measured in constant value dollars, our endowment has not increased in proportion to our increase in size and national responsibility. This is why Mr. Sloan remarked today at our Executive Committee meeting that that \$62,000,000 represents only half of our needs.

This condition of progress and advance at M.I.T. which I have sought to report is, even more than the handsome building which will bear his name, Karl Compton's truest and most apt memorial. It was his lifelong goal to seek ways to augment man's understanding. It was his strength that he could stand unafraid and challenged before the majesty and mystery of what man does not understand. It was his delight to witness and encourage the ever-renewing creativity of young minds working with freedom and seeking to understand. This is the glory of a great educator and a great educational institution.



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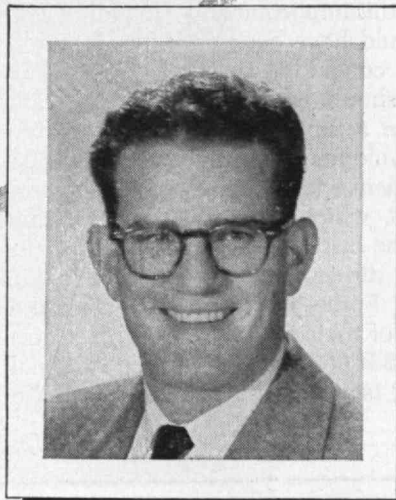
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Some of our most successful agents have technical backgrounds.*

(Continued from page 238)

In not only carrying on, but speeding up and expanding Karl's plan for the new laboratories, President Killian took on a major job. He and Karl had just completed their vital postwar expansion and rehabilitation program for the Institute, for which they had raised a total of nearly \$50,000,000 in the post-war years! This program had been designed to maintain the Institute's position at the apex of science and engineering in America—and indeed the whole world. However, the rate of progress in the field of nuclear science, backed by hundreds of millions of dollars of research and development work financed by the government, was so great that even the Institute's new facilities were inadequate to keep it in the forefront of this important and expanding field of research.

It would have been easy for Compton and Killian to have concluded that they, as well as prospective donors, should have a breathing spell, and that M.I.T. could for a time keep adequately in touch with the new developments in nucleonics by taking on more government-sponsored research in government-owned facilities, which they have been continually pressed to do. The Institute's major responsibilities in developing and directing the great Lincoln Laboratory for the Air Force were already using a considerable number of their top physicists and electronics experts, and the \$57,000,000 Brookhaven National Laboratory on Long Island was available to it and other eastern

institutions for both research and instructional work in nuclear science.

But fortunately for the Institute's primary functions of instruction and basic research, and for industry and the nation as a whole, Compton, Killian, and their associates realized that nuclear research was already becoming too nearly a government monopoly, in spite of real efforts by the Atomic Energy Commission to avoid this. Government-sponsored research in government facilities and under government security regulations, however necessary for the development of nuclear weapons, cannot be expected to attract in peacetime the type of men, and carry on the type of research, for which M.I.T. is famous.

I yield to no one in admiration for the stupendous job of weapons development which the Atomic Energy Commission has carried out, with the aid of many scientists who have sacrificed their own preferences in order to do it. However, I believe most thoughtful people agree that independent work, in places like the Compton Laboratories and the Nuclear Institutes of the University of Chicago, is the nation's best hope for maintaining its leadership in the manifold peaceful uses of the stupendous possibilities of atomic fission and possibly fusion. In addition, the laboratories will study the amazing new particles discovered in the effort to understand nuclear composition and energy.

It is interesting that the important and highly successful Geneva Conference on Peaceful Uses of
(Concluded on page 262)



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- (b) the inner shield and outer shield 100-120 mmf per ft.

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- (a) the conductor and inner shield 10,000 megohms per 1000' at 25°C.

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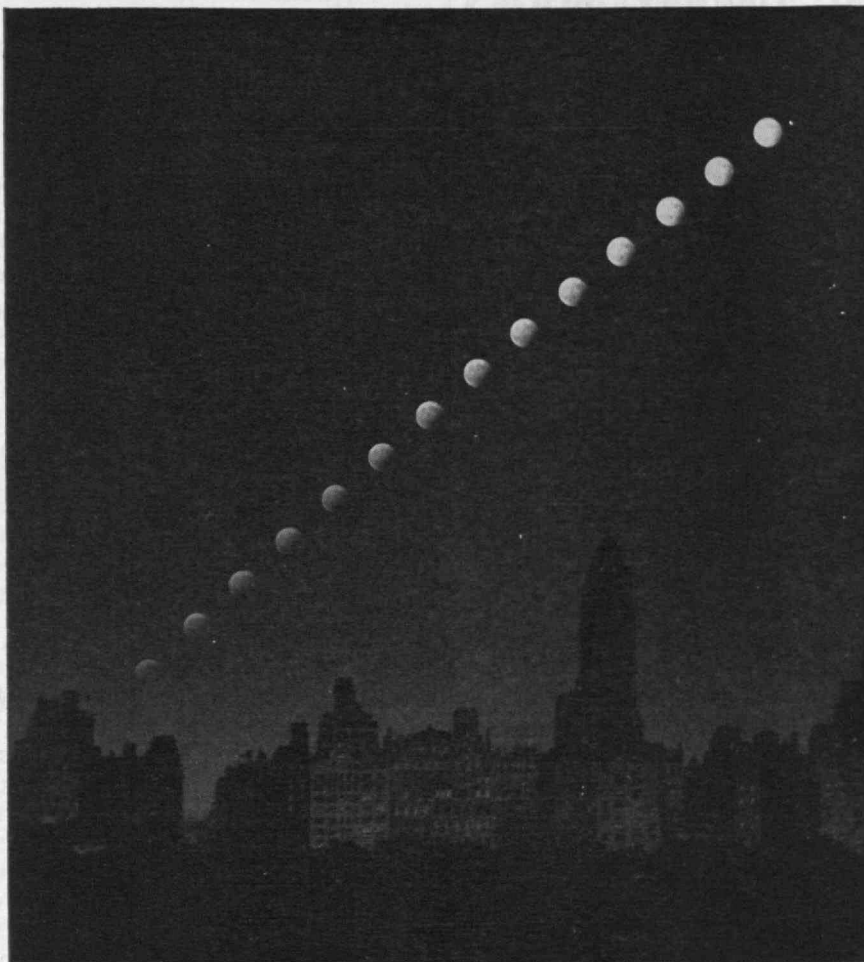
- (b) the inner and outer shield 5000 megohms per 1000'.

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(Concluded from page 260)

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Atomic Energy was planned and carried out under the chairmanship of Professor Walter G. Whitman, '17, Head of the Institute's Department of Chemical Engineering, who is a member of the General Advisory Committee to the Atomic Energy Commission. I might add that that appears to have been the only really successful Geneva Conference in 1955!

As Dr. Killian has pointed out, only the carrying out of a nuclear research program on the campus, and guided by men on the instructional faculty, with the laboratories convenient for graduate research, can possibly keep M.I.T.'s instruction in these new fields at the peak of excellence and up-to-dateness which we have come to expect of it. As Dr. Killian has reported, we can rejoice today that the successful completion of these facilities is assured. We are particularly happy that the Alumni this year contributed over \$500,000 to this project, almost entirely in small- and medium-sized gifts.

Expanding Frontiers of Science

These are, of course, not the last major new facilities which M.I.T. will need in order to maintain its pre-eminent position. The frontiers of science, unlike our geographical frontiers, are forever expanding into the unknown — and sending back new promise of improving the lot of mankind. We who are friends of M.I.T. can rejoice that President Killian has so clearly justified the confidence that Dr. Compton and the rest of us have placed in him. We can be sure that under his leadership, and that of members of the Corporation such as Mr. Sloan, M.I.T. will continue to let its friends know what is necessary to maintain leadership in training the kind of men that industry and the country so badly need. Those friends will again be happy to rally to its support.

In closing these remarks about a truly great man, I want to quote Doctor and Mrs. Compton's favorite motto — one which only ardent campers, such as they were, can fully appreciate:

"Leave every camp-site better than you found it!"

How fortunate for the Institute, for the nation, and indeed for the whole world, that he and Margaret made M.I.T. their camp-site for so many years, and left it so much better for their having been there.



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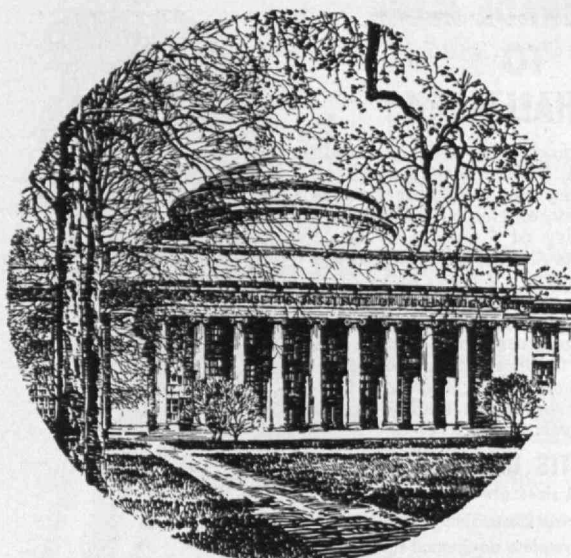
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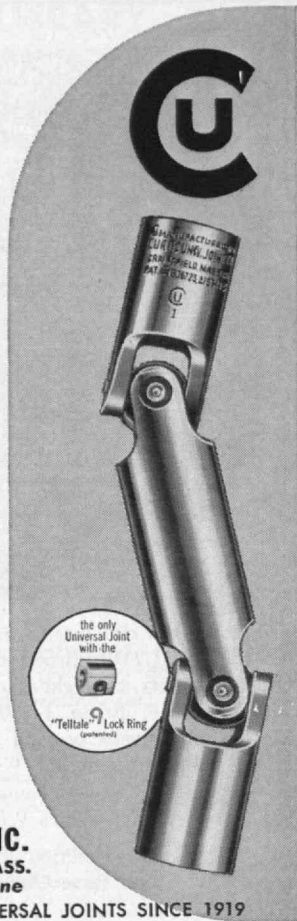
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TREND OF AFFAIRS

(Continued from page 230)

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To test the SAGE system, Lincoln Laboratory and the Air Force built, in eastern Massachusetts, an experimental test network known as the Cape Cod System. Radars were erected at strategic locations
(Concluded on page 266)

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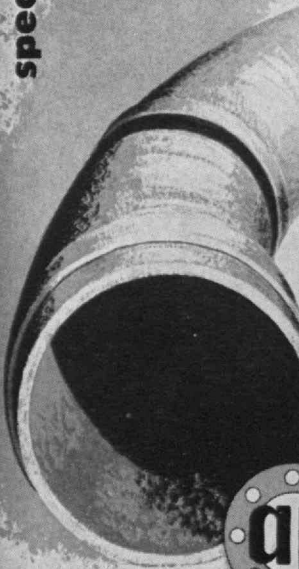
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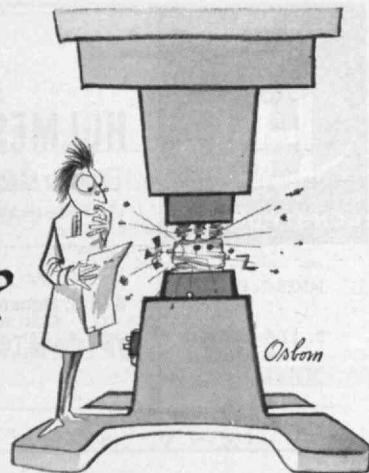


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TREND OF AFFAIRS

(Concluded from page 264)

and linked to a computer in M.I.T.'s Barta Building. At Hanscom Air Base the Air Force Cambridge Research Center set up a special test support wing to operate airplanes used in evaluating the System. Additional test flight facilities were provided by the Naval Air Development Unit at South Weymouth, Mass.

M.I.T. Lincoln Laboratory was organized in 1951 at the joint request of the Army, Navy, and Air Force following announcement of Soviet possession of the atomic bomb and long-range bombers. Its primary purpose is to launch an all-out technological attack on some of the new problems of air defense. Although supported by the three armed services, Lincoln's prime contract is with the Air Force.

Lincoln Laboratory is managed for M.I.T. by Faculty members with organizational liaison to the Institute through Admiral Edward L. Cochrane, '20, Vice-president for Industrial and Governmental Relations.

Director of Lincoln is Marshall G. Holloway, an M.I.T. professor and eminent nuclear scientist who came to Lincoln last May to succeed Albert G. Hill, who returned to his work as M.I.T. professor of physics. Dr. Holloway came from Los Alamos Scientific Laboratory where he made important contributions to the development of atomic weapons during his 12 years of service. George E. Valley, Jr., '35, Associate Professor of Physics at M.I.T. and a specialist in nuclear physics and cosmic radiation, is associate director of Lincoln.

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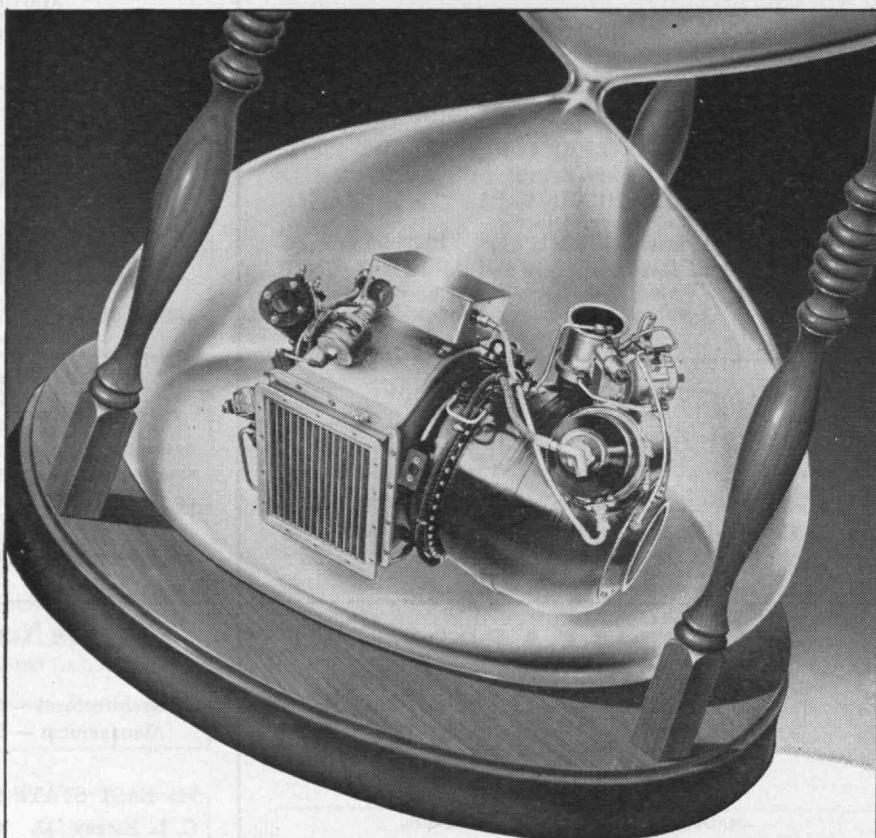
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Gifts by Will

TO THE Massachusetts Institute of Technology



The Institute emerged from World War II with a twofold financial problem. First, there was the immediate need for capital funds to finance the important conversion to peacetime activities in preparation for the many new responsibilities and opportunities which lay ahead. This need was met through the \$20,000,000 Development Drive, the successful completion of which provided many urgently needed additions to plant and facilities and underwrote the Institute's educational program with a new strength and independence.

The second aspect of the Institute's financial problem is the need for sufficient new funds to guarantee the continuing support of its long-range program. This need must be met by grants from industry and foundations, by current gifts, and by bequests from individuals.

In the past, bequests have provided a very large part of the endowment and building funds which have been established and are helping to maintain many of our valuable educational institutions To safeguard the future of M.I.T., the number of "Gifts by Will" from Alumni and friends must be increased.

M.I.T. invites you to consider the opportunities for worth-while achievement in the years to come by including the "Massachusetts Institute of Technology" among those to benefit from the accomplishments of your life.

A booklet "Gifts by Will," outlining different forms of bequests to M.I.T., is available to you or to your attorney by writing to:

M.I.T. Development Office
Massachusetts Institute of Technology
Cambridge 39, Massachusetts

Alumni AND Officers IN THE News

Mystery Benefactor

ALFRED P. SLOAN, JR.'95 has been revealed as "Mr. X" who, this past year contributed half a million dollars to the Alumni Fund. His contribution doubled the Fund for 1955 for the Karl Taylor Compton laboratories. Among the other grants which Mr. Sloan has made to the Institute are: The Sloan Automotive Laboratories which were completed in 1947; The Sloan Metals Processing Laboratory, a gift in 1951; The Sloan Fellowships in Industrial Management, given in 1949, in which promising students in Industry are given the opportunity to come to the Institute to obtain an S.M. in Industrial Management. They come on Sloan Fellowships on the arrangement that they promise to return to their company after the period of study. The money they receive for scholarship and the difference, provided by the company, compensates their annual salary. The fourth contribution is the Sloan Building which was purchased in 1950 for the School of Industrial Management.

We Ask You To Notice

SAMUEL CATE PRESCOTT'94, Dean of Science, emeritus, M.I.T. who has been honored by a fellowship in his name presented by the Refrigeration Research Foundation, Incorporated, Colorado Springs, Colo. The title of the fellowship is "The Samuel Cate Prescott Fellowship in Food Refrigeration." The fellowship will pay academic expenses for one year in the sum of \$2500, and is intended to encourage young men and women in research in the fields of food refrigeration and refrigerated warehousing of commodities.

LOUIS S. CATES'02, who was awarded the gold medal of the Mining and Metallurgical Society of America. Mr. Cates was given the award for "distinguished achievement in mining and public service" in connection with his work in the development of low-grade copper deposits in Utah and Arizona. Mr. Cates is chairman of the Phelps Dodge Corporation.

ROBERT B. WOODWARD'36, Morris Loeb Professor of Chemistry at Harvard University, who has recently received the 1955 Research Corporation Award for Contribution to science in recognition of his brilliant achievements in synthesizing cortisone and other drugs. JOSEPH W. BARKER'16, President and Chairman of the Research Corporation noted that Professor Woodward, as the 20th recipient of the award since 1925 joined an outstanding group which includes VANNEVAR BUSH'16. The research award is an annual one which consists of an honorarium of \$2500, a plaque, and a citation.

CHARLES H. SMITH, JR.'42, President of the Steel Improvement and Forge Company of Tulsa, Okla., who has been chosen one of the 10 Outstanding Young

Men of America for 1955. Mr. Smith is a "pioneer in labor-management relations concepts and an outstanding leader in a multitude of Cleveland community programs. The Junior Chamber of Commerce sponsors this program as a means of informing the world "that success in the American free enterprise system is still attainable to those who strive to achieve."

Elections

JOSEPH L. GILLSON'21 is now vice-president of the American Geological Institute. Dr. Gillson is a member of the Du Pont Company's Development Department and geologist for the company. He is also vice-president of the Society of Economic Geologists and the American Institute of Mining and Metallurgical Engineers.

ALBERT H. WECHSLER'21 has been recognized nationally by industry in his election to the board of directors of the Rubber Manufacturers Association. Mr. Wechsler is vice-president and general manager of Converse Rubber Corporation.

ALFRED G. NOBLE'23 Admiral USN, Ret., has been elected executive vice-president of Vitro Corporation of America. Admiral Noble was retired in 1951, having served as Chief of the Bureau of Ordnance for the previous three years. Since leaving the navy, he has been executive vice-president of the Nordberg Manufacturing Company of Milwaukee, Wisc., and the Martin-Perry Company of Toledo, Ohio.

JAMES H. DOOLITTLE'24, Vice-president of Shell Oil Company, has been elected to honorary membership in the American Society of Mechanical Engineers.

Appointments

JAMES R. KILLIAN'26 has been named chairman of the board of consultants who have been appointed by President Eisenhower to make periodic checks on the government's foreign intelligence activities. The "watchdog" group has been appointed at the recommendation of the Hoover Commission, with the hope that it will help assure that intelligence work is being efficiently conducted. Other M.I.T. Alumni serving on the committee with Dr. Killian are Lt. General JAMES H. DOOLITTLE'24, commander of the first World War II air raid on Tokyo, and EDWARD L. RYERSON'09, Chairman of the executive committee, Inland Steel Corporation, Chicago.

MAJOR GENERAL LESLIE E. SIMON'29, Ret., has been appointed to the board and elected a director of Gruen Precision Laboratories, Incorporated.

JOHN LAWRENCE'32 has been advanced to president and chief executive officer of Joy Manufacturing Company.

JOHN D. NORTHRUP'32 has been named Administrative Division Vice-president

and head of Administrative Services for Owens-Illinois Glass Company.

DONALD G. FINK'33, Director of Research of the Philco Corporation and former editor of *Electronics*, has been appointed editor of the proceedings of the Institute of Radio Engineers.

HOWARD W. LUNDY'39 has been appointed scientific director of the Muscular Dystrophy Associations of America.

EDWARD T. THOMPSON'49 is now one of the associate managing editors of *Chemical Week*, a publication of the McGraw-Hill Publishing Company.

Obituary

WILLIAM GILMORE'83, July, 1955
FREDERICK MACKINTOSH'86, Nov., 1955
WILLIAM W. PEABODY'93, Nov. 7, 1955
CHARLES BANCROFT'97, Dec. 18, 1955°
WALTER F. BUCK'97, January 3.°
FRANK I. HOWE'97
A. LORING SWASEY'98, January 7°
GERALD B. STREET'99, June 28, 1955
GEORGE R. TOWNSEND'99, Dec. 27, 1955°
ZENAS BRIGGS'00, October 5, 1955°
G. W. PICKARD'00, January 9°
WILLIAM M. BASSETT'02, Dec. 2, 1955°
CLARK A. BRYAN'03, November 29, 1955°
CLAUDE H. HOOPER'03, Sept. 30, 1955°
WALTER S. DILLON'04, Nov. 23, 1955
CHARLES W. ELMER'04, Nov. 17, 1955°
CHARLES J. EMERSON'04, January 7°
WALTER E. HADLEY'04, Dec. 11, 1955°
LEWIS J. LYMAN'05, May 28, 1955°
JAMES A. NEWLANDS'05, Dec. 2, 1955°
FRANK E. PAYNE'05, November 30, 1955
JOSEPH N. MCKERNAN'06, Nov. 28, 1955°
CARL J. TRAUERMAN'07, Dec. 17, 1955°
HAROLD P. GUERNEY'08, Dec. 31, 1955°
JOHN I. B. LARNED'08, Dec. 3, 1955°
LINCOLN MAYO'08, January 8°
EDWARD J. HOOPER'09, Nov. 2, 1955°
FREDERIC K. CASTLEHUN'10, Nov. 24, 1955°
RICHARD FISHER'10, November 14, 1955°
DUDLEY W. PHELPS'10, October 2, 1955
HAROLD GREENLEAF'12, Nov. 6, 1955°
PAUL C. WARNER'13, July 28, 1955
ABRAHAM HAMBURG'15, Nov. 10, 1955
A. K. ALTHOUSE, Sr.'17, Nov. 5, 1955°
JOHN M. HANLEY'18, December 8, 1955°
CLEM HALLINAN'20, November 22, 1955°
ALEX WISHNEW'21 July 27, 1955°
EVERETT L. KOCHMANN'24, Oct. 11, 1955
WILLIAM F. FAGAN'25, Dec. 2, 1955°
JOHN H. FIELD'27, February 21, 1955°
JOHN W. BAHR'31, August 24, 1955°
FRANK D. MERRILL'32, Dec. 11, 1955°
SYDNEY NASHNER'34, August 15, 1955°
DONALD W. TAYLOR'34, Dec. 24, 1955
DANIEL TOWER'37, November 4, 1955°
JOEL I. WAGGMAN'2-44, January 14, 1953
JOHN G. BUCHANAN'2-46, August 1, 1949
WILLIAM G. ELKINGTON'50, Aug. 27, 1955
EDMOND J. DOZOIS, Jr.'51, June 8, 1955°
GENE R. GRAHAM'51, September 6, 1955°
RUSSELL H. BOCKES'55, Dec. 17, 1955
ROBERT L. HAWKINS'55, October 10, 1954
ROBERTO E. SLOWAK'55, February 1, 1953
° Further information in Class Notes

News FROM THE Clubs AND Classes

CLUB NOTES

Boston Luncheon Club

Thirty-eight members were present at the December 15, 1955 meeting to hear a talk on "The School of Engineering at M.I.T." by Dean of Engineering C. Richard Soderberg '20 in which he stated:

"The effective utilization of the intellectual manpower of the young people of America is one of our most important tasks. The School of Engineering at M.I.T., consisting of seven departments, has awarded three-fourths of the M.I.T.'s bachelor of science and master of science degrees and nearly one half of the doctorates in the last five years, while having approximately 50 percent of the faculty and budget.

"Originally, M.I.T. furnished a large percentage of the engineers in the U. S. but with an increase in the number of schools awarding engineering degrees, only one to two percent of the total American engineers are trained at the Institute now. However, M.I.T. dominates the graduate engineering educational field both quantitatively and, we believe, qualitatively. With the ever increasing need for more and more engineers, the school must strike a balance between this need and the maintenance of high quality.

"U.S. life and civilization have become dependent on science and engineering and we need a greater number of engineering graduates, yet our colleges are barely able to turn out enough to maintain the existing number of engineers. This is caused by (1) the fact that births are increasing rapidly and (2) a greater percentage of our youth must be influenced in the choice of professions. As with our natural resources, we must work harder to produce comparable results. We no longer have the large pool of untapped manpower resources of a few years ago. Also, the general public seems to have less respect for intellectual accomplishments than in the past when it was considered a sin not to help gifted children to acquire an education.

"Industry is doing much to alleviate the shortage by assuming an increasing responsibility in furthering engineering education. Also, there are several programs whose aims are to have high schools place added stress on science and engineering educational preparation. M.I.T. Alumni, too, are making a definite contribution by urging secondary school students of the upper intellectual level to go into science and engineering."—GEORGE A. PARKHURST, *Secretary*, 1284 Soldiers Field Rd., Boston, Mass. VINCENT T. ESTABROOK '36, *Chairman*, FREDERICK N. DILLON '22 *Vice-chairman*, GEORGE A. PARKHURST '36, *Secretary-Treasurer*, 1284 Soldiers Field Rd., Boston, Mass.

Buffalo

On August 22, 1955 our traditional annual summer picnic was held at the Buffalo Yacht Club at Point Abino, Ontario, Canada. This was the first get together of the consolidated clubs of Buffalo and Niagara Falls, and 38 were present. Our first Dinner Meeting of the combined groups was held December 5, 1955 and we had 35 members present.

The dinner was excellent and was followed by a talk on "Automotive Fuels and Lubricants" given by Carl W. Georgi, director of research Quaker State Refining Corporation. Mr. Georgi presented the facts to debunk certain advertising claims to the extent that the chairman had to call a halt to the question and answer period at 10:30 p.m. We feel certain such meetings should increase local attendance.—JOSEPH M. ENGEL, *Secretary*, 158 Linden Avenue, Buffalo 14, N. Y.

Cleveland

The annual Christmas luncheon of M.I.T. alumni in Cleveland, with M.I.T. students from this area as our guests, was one of the most successful such affairs we have had. 65 persons, comprising some 40 of our members and about 23 students home for the holidays, gathered at the University Club for the luncheon on December 28. In addition to a most pleasant informal luncheon, those present enjoyed a series of reports by the students on current activities and affairs at the Institute.

At this writing, future activities for the remainder of the 1955-56 season are in the planning stage. Tentatively, the schedule will probably include two meetings, and perhaps events appropriately marking the fact that 1956 is the 50th anniversary of the formation of the Cleveland M.I.T. Alumni Association. We also plan to bring our membership and address lists up to date, and perhaps to publish a directory of our local Alumni contingent. For these purposes, questionnaires will be sent to all those on our mailing list, which probably will have been received by the time this is published.

M.I.T. Alumni in the Cleveland area who have not received such a questionnaire should contact the undersigned. Those who have received the questionnaire but have not yet returned it are requested to send it back promptly.—HERBERT J. HANSELL, *Secretary*, 1759 Union Commerce Bldg., Cleveland 14, Ohio.

Kentucky

The M.I.T. Club of Kentucky topped off 1955 with an eggnog reception at the Pendennis Club in Louisville. This event has become an increasingly popular affair, and is developing into an annual occasion. The Club's monthly luncheon meetings

are continuing successfully with moderate attendance. Several of the members have made local headlines in recent months. Howard Edwards '45, has been elected to the board of directors of the Louisville Chamber of Commerce. Mason Noyes '19 has been elected chairman of the Louisville Engineering and Scientific Societies Council. Archie P. Cochran '20 has been appointed by the Governor to the board of the Kentucky state fair, adding this to his many other civic recognitions. Frank P. Wardwell '38 was elected vice-president and director of Junior Achievement of Louisville, Incorporated.

Among those members attending recent meetings are: Frederick Stover '10, Craig P. Hazelet '18, Mason Noyes '19, Charles Breitbeil '22, Albert Entwistle '26, Melvin Sack '28, Arthur Cary '34, George Wormsette '38, Frank P. Wardwell '38, R. E. Christie '43, J. R. Kane '44, John L. Dawson '44, Howard Edwards '46, John Dedrick '48, Dan Harms '50, T. R. Metzger '50, E. J. Schickli, Jr. '50, D. R. Goodman, Eugene E. Koch '51, Byron Burch '51, Howard J. Wood '31, Walter J. Weeks '47, Elmer Skonberg '29.—JAMES R. KANE, *Secretary*, 2408 Douglass Blvd., Louisville, Ky.

Milwaukee

The holiday luncheon for Club members and M.I.T. students on December 27 at the University Club again demonstrated that this annual affair is popular with members and guests. Sixteen students were guests of the Club, and 20 members attended the luncheon. Short talks about the activities of the Educational Council and of the club's Employment Committee and conversation about school programs and activities provided an enjoyable two hours.

An analysis of the composition of the group of 50 students from Wisconsin at M.I.T. this year showed that 20 are graduate students, six are in the class of '56, eight in '57, six in '58, and 10 in '59. Chemistry and electrical engineering are the most popular courses this year for Wisconsin students, with chemical engineering and physics as runners-up. A 25 percent increase within one year in the number of Wisconsin students at M.I.T. may be indicative of the increasing influence of the Institute within the state.

The students at the luncheon were William Alexander '57, Robert Cooper '58, Harry Flagg '57, Monroe Evans, Rodger Foltz '56, Dean Karnopp '56, Robert Linde '56, John Lindenlaub, John Lindner Jr., Charles McClure '59, John Moyer '59, Robert Pflieger '59, Gerald Ryan '57, Charles Staples '59, Jesse Wallace '58, and Donald Wempen '59. Alumni at the luncheon were George Anderson '24, John Ballard '35, Edwin Bartlett '06, William Bohlman '49, Robert Gillmeister '49, Frank Briber Jr. '43, Charles Haeuser '51, Arthur Hall '25, Maurice James '27, Harold Koch '22, John Koch '55, John LaRue '48, Her-

rick Lauson'53, Erling Mathiesen'29, George Pollock'21, John Monday'51, Charles Sollenberger'44, Elton Staples'26, Emerson Van Patten'24, and Robert Cotton'53. — WILLIAM R. BOHLMAN, *Secretary*, 4675 North 104th St., Wauwatosa, Wisc.

Monterrey

In the evening, December the 19, 1955, Harold E. Lobdell and his wife Mrs. Conchita Lobdell, arrived in Monterrey by American Air Lines flight. There was a committee of the Club to receive them; formed by: Mr. and Mrs. Leonardo Siller'28, Rodolfo González Garza'34, Eliot Camarena'44 and Rodolfo F. Barrera'49, who took them to the Ancira Hotel.

A group of friends was waiting for Mrs. Lobdell at the Hotel to meet her. She is from Monterrey.

Next day several members of the Club had dinner at the Casino of Monterrey with Mr. Lobdell; during this occasion there were many memories of old times. Present were: Julio de la Fuente'33, Bernardo Elosua'23, Rodolfo González Garza'34, Eliot Camarena'44, Rodolfo F. Barrera'49, Manuel R. Llaguno'46. — ELIOT CAMARENA, *Secretary*, Sucursal "J." Monterrey, N.L., Mexico.

New York

The M.I.T. Club of New York has really begun to go places. Under the guidance of B. H. Nelson'35, the Membership Committee has increased membership to more than 1200 persons. This is not only an all-time record for New York, but we are getting more members continuously.

The new quarters have been enthusiastically received by almost everyone. There is generally a good turnout for lunch every day, and often small dinners are held in the evening. The Club is an excellent place to have lunch in New York; there is always a congenial group at hand, the food is of high calibre and in good quantity, service is good, but most important, you never have to stand in line to eat. The prices are reasonable, too. For \$1.25 you can get a cup of soup, a sandwich, dessert and coffee. That is pretty hard to beat anywhere in the city.

It would certainly pay Alumni who have to come to New York at all frequently to consider taking out a non-resident membership. The dues are low and there are many advantages. For example, any time you need a room in a hurry, a call to the Club will do the trick. The new quarters also make a good base for operations while you are in town. Meals are easily obtained, and your guests are welcome. The next time you are in New York drop around to the quarters in the Hotel Chatham on 48th St. at Vanderbilt Ave. We think you will be very pleasantly surprised.

Many of the members turned out for the Karl Compton dinner given by the Corporation at the Waldorf Astoria Hotel on January 4. Dr. Killian told us of the many new and wonderful things in store for the Institute.

The next event scheduled is the Mid-Winter Program to be held February 2 at Longchamps 42nd St. Professor W. G. Whitman will tell of some experiences in the field of atomic energy.

"Mac" MacGuire has moved to Schenectady and accordingly has found it necessary to resign as Club Secretary. President A. L. Bruneau has appointed me to fill out the unexpired term. — JOHN E. PLANTINGA, *Secretary*, 57 Center Rd., Old Greenwich, Conn.

Puerto Rico

A meeting of the M.I.T. Club of Puerto Rico will be held at the Colegio de Ingenieros building, February 3, 1956 at 8:00 p. m. At this meeting a movie on City Planning showing how a pleasant residential area can degenerate into a noisy, overcrowded slum and how Americans can halt the spread of slums by community action, loaned by the P. R. Planning Society, and one South American film owned by Tony Kayanan, will be exhibited. We hope that by this time we will have in the island a film loaned by the American Society of Civil Engineers, showing the construction of the foundations of the Nikkatsu International Building in Tokyo. To conclude we will show a series of slides that Bruce Kingsbury, Executive Secretary of the Educational Council, has prepared. This set of slides shows the work, activities, and environment for students at M.I.T. at the present time. Considering that the meeting is not too technical but rather a friendly one, guests, wives and girl-friends are also cordially invited.

On December 8, 1955, the Club held a cocktail party at the the Caribe Hilton Hotel in honor of Robert E. Booth, Associate Librarian of the Institute, who was visiting the island as guest of Luis Ferre'24. Twenty members were present and enjoyed the party. — ULISES BARROS LOUBRIEL, *Secretary*, c/o Puerto Rico Planning Board, Box 9447, Santurce, Puerto Rico.

Rochester

On Wednesday, December 28, the Club held its annual Christmas luncheon. This is a regular yearly function of our Club held during the Christmas vacation at which time we invite boys from the Rochester area now at the Institute to be our guests. This year 44 Alumni and 17 undergraduates were at the luncheon. Also for many years we have been most fortunate in having Prof. A. A. Ashdown join us for this occasion. Again this year he was with us. One member from each the freshman, sophomore, junior and senior class were called on to give us their impression of life at the Institute these days. Prof. Ashdown also spoke to us bringing us some recent highlights of developments at M.I.T. We had three father and son combinations at the luncheon: Richard M. Wilson'30 and his son, Stewart'59, Henry R. Couch'20 and his son Henry Jr.'59, William H. Vogt Jr.'19 and his son William III'52. — JAMES K. LITTWITZ, *Secretary*, 191 Rogers Parkway, Rochester, N. Y.

Sao Paulo

The Sao Paulo Light and Power Company was host for the eleventh meeting of the M.I.T. Club of Sao Paulo on October 29, 1955.

After assembly at the Alto da Serra, the group went down to Cubatao by the

incline trolley for a visit of the power-houses. (Ever travel downhill at 38 degrees to the vertical?)

First, an inspection was made of the work in progress on the underground power house. To get a rough idea of this bold project, imagine the excavation of a turbine chamber 19 meters wide by 120 meters long by 40 meters high out of solid rock — all this, with well over 150 meters of rock bearing down on you! When completed, the six generating units will deliver a total of 390,000 kw.

After a visit to the already existing power house, the group trolleyed uphill to the Company Clubhouse, where an excellent lunch was served.

Present at the meeting were: Adolpho Santos, Jr.'24, Jorge H. Johnston'32, Werner O. Bachli'33, Oswaldo Torres'45, Alfredo de Andrade'45, Jose de Souza'45, Paulo de Mello'47, Jordan Loftus'50, Marc Aelion'51, and Werner Kahn'52. Also present were: J. F. Brittain'22, on a visit to Brazil; C. S. Allen, of General Electric Santo Andre; Edward Piper, Aldo Varisco and S. de Silva, all with Petrobras. — MARC AELION, *Secretary*, Laborterapica S/A, Caiza Postal 2240, Sao Paulo, Brazil.

Schenectady

Before the Christmas holidays, the club had one of its most interesting meetings when we played host to about 30 of the Schenectady high school science and math teachers. The invited speaker was Prof. N. H. Frank, who gave a dynamic presentation of M.I.T.'s new approach to the teaching of undergraduate physics. A lively discussion followed which allowed the members to obtain a better impression of the high school teachers problems. A small dinner meeting preceded the affair with Prof. Frank; the members attending were J. C. Acton'50, D. D. Adams'50, P. L. Alger'15, H. W. Bibber'20, W. B. Giles'50, J. A. Kohn'41, and H. Stern'50.

The guest speaker for our January luncheon meeting was A. E. Wiles, a manager in General Electric's Manufacturing Services. He presented his department's approach to automation and discussed some of the equipment that his group has developed to implement automation. The meeting was well attended with over 35 guests and members present.

At the present writing, plans are progressing for our annual dinner meeting on February 3. We are looking forward to having Professor Den Hartog with us at that time. — W. B. GILES, *Secretary*, Netherlands Village, Wempel Bldg. Apt. 9, Schenectady, N. Y.

Washington

The first dinner of the year was held at the Cosmos Club on November 29 and featured a talk by Wendell B. Barnes, Administrator of the Small Business Administration on the subject of "Opportunities in Free Enterprise." Lt. Governor John W. Rollins of Delaware was a guest of honor and spoke briefly on the same subject. Both Mr. Barnes and Lt. Governor Rollins are friends of Bill Ahrendt, our Club president, who became associated with both men in connection with the Young Presidents Organization. It was a very successful dinner meeting with a total attendance of 71 persons.

A second dinner meeting of the season was held at the Cosmos Club on January 26 and featured an address by Dr. Detlev W. Bronk, President of the National Academy of Sciences, Vice Chairman of the National Advisory Committee for Aeronautics and former President of Johns Hopkins University.

The U. S. Air Force has recently appointed Chester Hasert as Technical Director of its Scientific Advisory Board.

Among the local M.I.T. Alumni seen at the January 4 M.I.T. dinner at the Waldorf Astoria were: William R. Ahrendt '41, Albert F. Bird '30, Andrew F. Hillhouse '43, Joseph Y. Houghton '26, Thomas K. Meloy '17 and Edward D. Merrill '09. — STERLING H. IVISON, JR., *Secretary*, 1703 37th St., N.W., Washington, D. C.

CLASS NOTES

• 1890 •

On the day before Christmas our assistant Secretary, Charles Sherman, received a Christmas card from Martin Southworth of Chicago with the notation: "Please pass my greetings to the members of my class, VI, '90." It was addressed to him as Secretary of the Class. Charles also called our attention to a probate notice which made it possible to get the following information from Mr. F. Alexander Magoun concerning his mother, our classmate, Mrs. H. W. Magoun, nee Martha R. Mann: "Mother died in her sleep on All Saints Day (Nov. 1). She had not been ill. She was 94 years old last June. She graduated from Wellesley, Class of '85 and did graduate work in biology under Sedgwick at M.I.T. Subsequently she taught botany and biology at Colorado College where she met and married the young latin professor. Her principal claim to fame was discovering and identifying a new kind of moss which the famous Professor Gray of Harvard named after her. She is survived by her husband, Herbert W. Magoun of Belmont who will be 100 years old in February, three children, Mrs. Charles S. Gillett of Matsugama, Japan, whose husband is president of a junior college for girls there, F. Alexander Magoun, long of the M.I.T. faculty, now retired but still active, and Dr. Harold J. Magoun of Denver. Incredible as it seems she took care of father and a ten-room house alone for 14 years after she had broken a hip at age 80." — GEORGE A. PACKARD, *Secretary*, 25 Avon St., Wakefield, Mass. CHARLES W. SHERMAN, *Assistant Secretary*, 16 Myrtle St., Belmont, Mass.

• 1894 •

Christmas has come and gone and we are started on another new year with its varied activities and problems. In the annual exchange of holiday greeting cards now so prevalent one occasionally gets a bit of news of a classmate or at least learns that he is still extant. Among the many cards received by the secretary and his wife those from our respective class-

mates were especially treasured, giving evidence of friendships of long standing. Incidentally, a Christmas or New Year's card offers a special opportunity for giving a bit of information to a class secretary by the addition of some brief item of interest, and sometimes can replace a letter, (which takes longer and more special effort), except when one has an extended account of work, travel, honors, or family items to pass on for class news. The secretary was delighted to receive friendly messages from the S. G. Abbotts, the N. S. Beans, the H. A. Crarys, the T. Hortons, the E. M. Hunts, the Jack Nowells, the Harry Warrens, and the George Owens, and from H. M. Chase, Ferd Schiertz, and George Sherman. Pleasant notes came also from the widows of some of our deceased but much loved classmates. Mrs. H. N. Parker wrote from Jacksonville telling of the splendid work her son and daughters are doing: Mrs. A. B. Tenney told of her return to Lexington from a trip to Hawaii, and Mrs. Austin Sperry told of disposing of the home in Berkeley and establishing herself in an apartment hotel in that city. As a New Year's resolution the secretary proposes to send a special greeting card to all surviving members of the class before next Christmas, with an appeal to reply with a brief notation regarding health, occupations, or interests which can be broadcast to the class through the usual class notes in the Review. This idea is suggested to secretaries of those classes which are near or have passed the half century mark. A special Alumni card might be designed by some artistic Alumnus for such a purpose. No charge for the suggestion. Happy springtime to all. — SAMUEL C. PRESCOTT, *Secretary*, Room 16-317, M.I.T.

• 1895 •

Your secretary has no means of constructing news items unless you mates contribute. It would make interesting reading, if some of you good lads would "loosen-up" and send us a biographical sketch — either long or short — so the other fellow would learn what you may have been interested in, and what you are doing now. Let's hope it happens. — LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

• 1896 •

Greetings to our classmates of '96 from your secretaries, both of whom have been incapacitated during these past two months with pneumonia and other confining difficulties. The Christmas cheer was somewhat strained because of these misfortunes but as of today (Jan. 11) we are making progress and will be in top form when this March issue reaches you.

A letter received from Charlie Hyde reiterates his activities and again reminds us that we can be active in useful occupations in spite of age limitations. Joe Harrington reports his family "in pretty good shape" and would wish all of you the best for 1956. A card from Bill Clifford at Christmas time says that he continues to enjoy freedom and the out of doors on his Virginia farm. Honors seem to continue to be heaped upon some of our outstanding classmates including Bill

Coolidge and Paul Litchfield. This June marks our 60th year. So far the only plans seem to center around the Alumni Luncheon in the "Rockwell Cage." Suggestions for attempting any more than this get-together would be welcomed. We have lost this last year six of our classmates, as follows: John Tilley, Jan. 25, 1955; Minor S. Jameson, May 20, 1955; Augustus J. Bowie, June 22, 1955; Henry A. Sherman, July 14, 1955; Herman V. Von Holst, October 17, 1955; Henry A. Waterman, October 25, 1955. — JOHN A. ROCKWELL, *Secretary*, 24 Garden St., Cambridge 38, Mass. FREDERICK W. DAMON, *Assistant Secretary*, Commander Hotel, Cambridge 38, Mass.

• 1897 •

The following was written by Professor Emeritus Charles B. Breed at his home in Camden, Me., under date of December 14, 1955. Having taken an active interest in Class affairs, Charlie Breed with Worcester, Hopkins and Bradlee formed the committee that carried on nearly all activities of the Class for a period of over forty years. It is the type of personal reminiscence that is of interest to our classmates and provided they had the interest and desire to do so, I am confident that other members of the Class could write in similar vein for the benefit of us all.

"Written to my beloved classmates as I sit by our big front window looking out on Penobscot Bay. Two hundred feet of stone wall keeps our home from washing into the sea. I built that wall in the summer of 1949 with the aid of three Tech students who needed to earn a little money. They each went home with some practical engineering knowledge and \$500. At 70 I left M.I.T. and at 79 gave up all professional consulting practice. Now, at 80, Elsa and I live here by the side of the ocean on an acre of land, with Dick Bowditch '23 my next door neighbor and woods and pasture land on the other two sides. Plenty of boulders jut through the lawn. Around each is a garden, roses, tuberous begonias, larkspur, white petunias.

"We have two sons, one daughter (Mrs. Donald A. Campbell) and five grandchildren. They visit us in Camden each summer and we wash the kids in the ocean, which is right in our front yard.

"Occasionally I give the Town Manager and the Community Hospital a little engineering advice.

"We have no radio nor TV, so we live in deep ignorance of how wonderful Ipana Toothpaste is. But we do get quite perfect music from our superior music player. March and April we live at the Brae Burn Country Club in West Newton, Mass. Those are the months we attend Boston Symphony, where we usually meet Jack Illsley and Walter Humphreys. Last spring we ran into Jere Daniell and his wife at the French Ballet at the Boston Opera House, and Elsa tells me she saw Jack Illsley in New York at the Tap-estry Show and the Vienna Art Treasures at the Metropolitan Art Museum.

"Since 18 I have played the flute. I now have the usual silver flute heard in orchestras. But my favorite is the big Haynes alto flute which gives tones not

unlike the cello. I think that the guy who reaches 80 and does not play a jew's harp or a harmonica is a sad spectacle.

"For reading, my eyes glance over a dozen of the monthly magazine tripe; they occasionally contain a good thought from Professor Schlichter or from our own Dean Harrison or from our distinguished Van Bush. (Ed. — Sounds like *The Atlantic Monthly*.) Just now I'm reading a recent book on *The Kaiser* by Von Kurenberg and Sir Walter Scott by John Buchan. I recommend both of them.

"Agnes Bradlee, Charlie's widow, calls every summer; she is living with her sister at Pittsfield, N. H. Alice Mansfield, Frank's widow, lives right here in Camden, Maine; she is a frequent visitor at our home. We also see Alice Worcester, Harry's widow, in the spring when at Brae Burn.

"Looking back on my 60 years of labor, there were three parts to my engineering career: (1) teaching and administration for 49 years in Civil and Sanitary Engineering, known as Course I; (2) authorship of books on Surveying. These books were written by Hosmer '97 and me when we were 27 years old. They have held the lead for 50 years. Hosmer died 20 years ago. Ten years ago I wrote single-handed another smaller book on the same subject. And my present active work is revising these three books every four years. (3) Consulting Engineering, principally for State of Massachusetts and for Pennsylvania R.R. — New York Central and Association of American Railroads.

"Have often been in Court as an expert on such spectacular cases as the Sacco-Vanzetti murder, failure of Pickwick Club building in Boston; consultant to Canadian Pacific Railroad on design and construction of The Seignory Club at Montebello, Province of Quebec, and consultant on several of the bad railroad wrecks on the New Haven.

"Have served as president of the Boston Society of Civil Engineers, of New England Railroad Club, of Breed Family Association and of Boston City Club. Was director of American Society of Civil Engineers for three years. In 1953 was made Honorary Member of American Society of Civil Engineers, the highest distinction that the society gives. Am National Honorary Member of Chi Epsilon, the scholastic society of civil engineers.

"An incident of our senior year I must tell you. Graduation time was close at hand. It was customary to bore your families who attended graduation with abstracts from one thesis of every course, read by the guy chosen to read his thesis. I'll tell you how it was done for Course I. Three candidates, John Carty, Maurice Underwood, and Charlie Breed, were chosen by the then head of department, and we were told to go to Huntington Hall on Boylston St. at an assigned hour with our theses under our arms. We went as commanded. The three of us read abstracts from our thesis standing on the holy spot where Lowell passed out. The critics sat half way back in old Huntington Hall. They were Arlo Bates, Sedgwick and one or two others; Molly Pearson from the English Department was probably there. Arlo told us that when he raised his hand it meant to raise our

voices; John and Maurice preceded me. As I was reading my few abstracts a German Band on Newbury St. started up "UNTER DEN LINDEN." Arlo raised his hand — I let go my powerful voice and I was chosen to read my thesis for Course I. I had bellowed myself to fame. I have told this to my three children as a perfect example of grasping opportunity. They laughed at me."

The Class lost one of its devoted members December 18 in the death of Wilfred Bancroft. Unusually active in his undergraduate days he served as president of the Class in our senior year, editor of "Technique," and was a member of the Institute Committee. A man of deep sentiment and loyalty to family, friends, and associates, he had a keen intellect as well as an unusual sense of humor. When opportunities offered he spoke well in public and was a brilliant writer. One of his favorite amusements was to write poems on special occasions which contained a rare mixture of humor and sentiment. Deeply religious in character he was a member of the Friends Quaker Meeting in Haverford as well as the First Unitarian Church of Philadelphia. He was born in Philadelphia June 9, 1874, son of J. Sellers and Mary Bancroft. His father was a distinguished mechanical engineer and inventor. Wilfred attended William Penn Charter School in Philadelphia graduating in 1892. This was followed by a postgraduate year at the school during which he was the first student to maintain throughout the grade of highest honors. Amongst other activities he was editor of the school magazine. He graduated at M.I.T. in Course II; mechanical engineering. Upon graduation he entered as an apprentice the shops of William Sellers and Company, Philadelphia, manufacturers of heavy machine tools and later became foreman of the machine shop. The Lanston Monotype at that time was built by William Sellers and Company having been perfected mechanically by the senior Bancroft. Later the Monotype Company acquired its own plant in Philadelphia, and Wilfred and his father left the Sellers Company to join the Lanston Monotype Company, Wilfred as sales manager. Incidentally, he personally was granted several patents on the machine. Subsequently, he served as superintendent and manager of the Slatersville Finishing Company, Slatersville, and as assistant treasurer of Stillwater Worsted Mills in Harrisville, both in Rhode Island. He later returned to the Lanston Monotype Company as Treasurer and Director in which position he remained until his retirement. At that time the position of auditor was created and given him as a compliment for his long service with the company. He also remained as Director of Cold Spring Bleachery, Yardley, Pennsylvania.

In 1905 he married Elizabeth Nields of Wilmington, Delaware. After 43 years of an unusually happy marriage she died in 1948. Surviving are two sons, John Nields Bancroft of Aiken, South Carolina, Wilfred, Jr., of Haverford, Pennsylvania, and a daughter, Gertrude, who is an Executive of the U.S. Census Bureau of Washington, D. C., and five grandchildren. He was a member of the fraternity

of Delta Psi, the American Society of Mechanical Engineers, University Club of Philadelphia and St. Anthony Clubs of New York, Philadelphia, and Boston.

We received the following change of address: Mrs. Albert P. Matthews, 1237 Glenwood Boulevard, Schenectady 8, N. Y.

We have just received the sad news of the death of Walter French Buck on January 3, 1956. The Boston *Herald* of January 4 stated: "Walter F. Buck, former Brookline resident and retired teacher, investment broker and engineer, died yesterday on his 80th birthday in a Boston hospital. Mr. Buck, a native of Manchester, N. H., attended M.I.T. and transferred to the University of N. H., graduating in 1897. Prior to retiring in 1954, he worked in research for the Raytheon Manufacturing Company, Waltham. He was a member of the Leyden Congregational Church, Brookline.

"He leaves his wife, the former Grace Louise Bicknell, and a sister." — JOHN P. ILSLEY, *Secretary*, 26 Columbine Rd., Milton, Mass.

• 1898 •

The Class of '98 was represented at the Compton Memorial Dinner by George Cottle, Daniel Edgerly, Lester Gardner, Edward Chapin and Dean George Harrison. Dr. Edward B. Hinckley, President of Babson Institute, was also in attendance, representing Roger Babson, who was in the South. This inspiring occasion is fully described elsewhere in the pages of *The Technology Review*.

In recent Class Notes, we mentioned that Lester had been honored at a dinner in Washington. We now have the correct "dope" from Lester, as follows — "I was able to go to Washington to attend the annual dinner of the Aero Club of Washington. There were 2000 to see the Collier, Brewer and Wright Trophies presented by Vice-president Nixon. The National Aeronautics Association had selected ten pioneers of aviation whom they called the 'Elder Statesmen of Aviation.' I was honored to be included and was introduced at the dinner."

Our classmate, Lester, talks about hundreds of thousands of dollars as easily as some of us about hundreds. Listen to this! "I learned while in Washington that Glenn Martin had bequeathed the Institute of Aeronautical Sciences \$250,000 to be added to the \$250,000 he gave previously. He also left \$100,000 to the Hunsaker Professorship Fund at M.I.T. This makes that Fund \$467,000, the highest endowed professorship in the world." Lester added that he expects that this Fund will be brought to \$500,000! We just can't find adjectives adequate to describe this brilliant achievement by our distinguished classmate.

Our industrious co-president, Daniel Edgerly, sent to the Class in December, 1955, Class Letter No. 16. He enclosed a card to assist in the diversification of the Class Notes. Replies have been most encouraging: one letter and twenty odd cards.

The following interesting letter came from Fred Gilbert: "Route 1, Box 244-C, Hemet, California. Dear Dan: I have been thinking for a long time that I owed

you and the class some sort of a report of activities or non-activities. Then along comes your letter soliciting this same information. I suppose you (and also Heber Hopkins, Class of 1898) are my oldest Cambridge-born friends of M.I.T. so it is especially gratifying to hear from you and to know that you are still active and interested in the old friends of some generations ago. First, in regard to my status, according to your classification: while I have retired from a regular 9-5 occupation, having bought four residences here in California since October 1951 and sold two of them, I think I am entitled to be called 'real estate operator.' (I also sold 50 residential lots in Montana to the School Board.) This has involved moving around and please note my last address which I hope will be fairly permanent. As I sit on the patio, with the thermometer at 72 degrees I look over our small apricot orchard to the San Jacinto mountains some 15 miles away. Lately I have become interested in 'planning' and 'land use' which is a very controversial subject in California with such hordes of people coming here in the past few years. Another hobby is 'art'—as expressed by local painters. Have a collection of Helena, Montana, artists and have found a number here in California. Nothing 'highbrow,' mostly landscapes. Music (as delivered by radio) and occasionally local opera companies are another 'interest.' Then, occasionally, we get down to the beach 65 miles away to see the Pacific Ocean. However, there is nothing out here to compare with the New England coast, in my maybe narrow and provincial opinion. Finally in this wrap-up of the life of the retired man, is the pleasure of basking in the sunshine at every opportunity. Tell Ed Chapin that I would have been very happy if he could have gotten over to Hemet in his last year's swing around the country. However, I will forgive him, realizing that such a long trip is very taxing and only the high-lights can be touched. However, if any of the class should get over to Riverside (where the Mission Inn is a worthwhile visit), we are only 25 miles away on very good highways at all seasons of the year. My street address is 1471 East Johnston Ave., but the post-office wants us to follow the rural route in sending mail. In other words we are in the country with electric light, telephone, city water, natural gas and paved streets. Can you beat it? I am dashing this off to get to you in time for Christmas for which Maud (Pratt) and I wish you many of them."

Thanks, Fred, for a very interesting letter. Fred also enclosed in his letter a sizeable folder, six double pages, entitled Hemet and San Jacinto—Riverside County—California, the Year Round!, which is so attractive that it almost induced me to fly at once to California.

In the February Class Notes there was an item describing the honoring of our classmate, Rear Admiral A. Loring Swasey on October 29, 1955. It is now our duty to report that Admiral Swasey passed on January 7, 1956. Ernest Russ discovered and kindly sent to us the following write-up:

"Taunton, Jan. 7—Rear Admiral A. Loring Swasey, 79, USNR (ret), retired naval

architect and head of the Navy's bureau of ships small craft construction division in World War II, died today at his home, 146 High St. Admiral Loring, who had practiced privately in Boston and New York, was the designer of the Navy's submarine chasers in World War I. Born in Auburndale, he studied at Massachusetts Institute of Technology before entering his profession with the firm of Swasey, Raymond and Page. After World War I service he became a vice-president of the Herreshoff Manufacturing Company, Bristol, R. I., and later a vice-president of the Henry J. Gielow Corporation of New York City. He entered World War II as a captain and was one of the designers of the PT boat and other small craft. Retired as a commodore, with the Legion of Merit, he recently was promoted to rear admiral. He was married in 1908 to Miss Dorothy Lovering of Taunton, who survives. Admiral Swasey was a member of various professional societies of naval architects and of the Edgartown Yacht Club on Martha's Vineyard, where he maintained a summer home for many years. Also surviving are two sons, David Loring of New York City and John Loring of Tuxedo, N. Y., and four grandchildren."

Ernest comments, "Dear Ed: You will probably see this notice but sent it along anyway. I always enjoyed seeing Swasey. He was an interesting chap. Will miss him at Reunions. Ernest."

New Addresses: Carl S. High, 1310 3rd St., Sarasota, Fla.; Samuel L. Neidich, Ventnor, New Jersey; James S. McIntyre, 71 Centre St., Fairhaven, Mass.—EDWARD S. CHAPIN, *Secretary*, 2 Gregory Street, Marblehead, Mass. ELIOTT R. BARKER, *Assistant Secretary*, 20 Lombard Road, Arlington 74, Mass.

• 1899 •

A few months ago there appeared in these columns, the story of a classmate (name not revealed) who made great sacrifices in order to get a scientific education. This is a somewhat similar story, part of which I know, because he was a high school classmate of mine. The rest of the details he told me during our fifty-fifth reunion. Tom (that was not his name) was the son of a laborer in the brickyards of North Cambridge. His parents sent him to high school although that was an age when many boys went to work after graduating from grammar school. Tom proved to be an excellent student, especially in mathematics and science. He once disputed the accuracy of a geometric theorem the teacher had demonstrated and proved her to be in error. He graduated second in a class of well over a hundred. He made such a record in chemistry that the chemistry teacher, an M.I.T. graduate, was instrumental in his being awarded a four year scholarship at M.I.T. He told me that at M.I.T. he brought his lunches or went without and often walked the five miles to his home to save car fare (then five cents).

An article in the Boston *Herald* for December 27 records the death of George R. Townsend of Winchester, Mass. George graduated in the Naval architectural course. He was consulting engineer for the New Haven Railroad for many years, retiring about twenty years ago. He

was a 32nd degree mason and a member of the Knights Templar. BURR R. RUCKARDS, *Secretary*, 381 State St., Albany, N.Y., MILES S. RICHMOND, *Assistant Secretary*, Little Compton, Rhode Island.

• 1900 •

We have only recently learned of the death last October 5, of Zenas Briggs. A graduate of Yale, he was with our class at M.I.T. only a short time. But he has been a loyal member of the Class, particularly in recent years. He has attended our annual reunions four times in the past six years. Although he has lived in the Los Angeles area for many years, he has usually spent his summers in New England and we understood that he meant to live here in the future. He passed away suddenly from a heart ailment in his apartment in Boston. We gave a brief account of his professional career in the Class Notes of the April 1955 Review. We shall miss him at future reunions.

The Newton Graphic of January 12, 1956 contains an article from which we quote as follows: "A famous inventor and thirty year resident of Newton Centre, Dr. Greenleaf Whittier Pickard, 78, died Monday morning (January 9) at the Newton-Wellesley Hospital after a long illness. World-recognized as a pioneer and authority in radio reception and transmission, he was one of the first men to broadcast the human voice by radio. He is also credited with the birth of the wireless detector, crystal detector radio compass and static eliminator. Among the awards he received for his work was the medal of honor from the Institute of Radio Engineers in 1926 and Armstrong Medal in 1941.

"For 10 years he served as consultant to the R.C.A. Victor Company of Massachusetts and 32 years with the Wireless Specialty Company. In 1945, the Harvard graduate opened his own business of Pickard and Burns, Incorporated, and became Chairman of the Board in 1952.

"Besides his wife, Helen (Liston) he leaves two sons, Greenleaf Jr., of Cosala, Mexico, Pfc. John B. of Newton and four daughters, Mrs. Edward DeGeorge of Newton Centre, Mrs. Kenneth Nolan of Darien, Conn., Mrs. John H. Flynn of Norwood and Mrs. Charles Thibau of Groton." A graduate of Harvard, he was with us only a short time. He was a grand nephew of John Greenleaf Whittier. ELBERT G. ALLEN, *Secretary*, 11 Richfield Road, West Newton 65, Mass.

• 1901 •

As these notes are written in January before the Class Letter is sent out, there is very little to say. Since writing the January notes I have received more information concerning Langdon Pearce about whom there was a short statement taken from a newspaper clipping. Langdon sent me papers of which he was the author and says: "You may be interested in the enclosed notes on the Sanitary District of Chicago with which I have been connected since 1909—some 46 years. It has been my life work. In the 'Quest of Water' reprint you will find mention of the big Chicago water filtration plant of the city with which our classmate, W. W. DeBerard, is connected. This is a city enter-

prise. The Sanitary District is an entirely separate municipal corporation." These two men are adding to the prestige of 1901.

I have just received a letter from Willard Dow giving some details of the reunion in June. However, you will have received his questionnaire of January 15 long before you read this. I hope that you will all answer it. If you are not coming let us know. If you are in doubt tell us what the prospect is. It is no small job to plan the affair so that it will run smoothly and if we know approximately how many are coming it will be a great help. Don't forget to reply to the Class Letter if you want any class notes. — THEODORE H. TAFT, *Secretary*, Box 124, East Jaffrey, N.H. WILLARD W. DOW, *Assistant Secretary*, 78 Elm St., Cohasset, Mass.

• 1902 •

Another break in the ranks of the Boston group of '02 men came with the sudden death of William M. Bassett on December 2, 1955. He was one of the younger members of the class being born June 24, 1881.

Bassett graduated from the civil engineering course and throughout his life followed the engineering profession. As a structural engineer with the New York Central Railroad, he worked on the construction of the Grand Central Terminal in New York. He later became associated with the New England Power Company with which he remained until his retirement in 1951, at which time he was superintendent in charge of structures. He took great pride in his engineering works and enjoyed overcoming the obstacles which they presented.

After retirement Bassett practiced as a consulting engineer and continued for several years to serve his old associates and others. He always kept in close touch with his brother engineers, being a life member of the American Society of Civil Engineers, and when possible attending its annual meetings. He had served also as the president of the Northeastern Section of the Society.

Bill had wide interests outside of business and greatly enjoyed the outdoors with hiking, canoeing, camping, etc. He held membership in the Appalachian Mountain Club, the Menhaden Yacht Club of Falmouth, where he had a summer home, and the West Newton Neighborhood Club. He had been also for many years on the M.I.T. Alumni Council serving as representative of the Worcester Club.

He leaves his wife, Katherine Varick Bassett; a son, William V. Bassett of Bethlehem, Pa.; and a daughter, Mrs. Edward W. Pride, Jr. of Needham. Lewis Moore and your secretary attended the funeral services.

Word has been received by a postcard sent Moore by Mrs. Millar that Les died last April. More information is being sought regarding his passing. Judson has returned to Florida and his present address is 3110 Segovia, Coral Gables, Fla. A Christmas card from Arthur Nichols gives assurance that he is "trying to keep a young heart" and is enjoying good health. — BURTON G. PHILBRICK, *Secretary*, 18 Ocean Avenue, Salem, Massachusetts.

• 1903 •

We are sorry to have to report two deaths this month. Clark A. Bryan, I, died in Carlisle, Penna., on November 29, 1955. We quote from "The Patriot", Harrisburg, Penna., as follows: "Clark A. Bryan, a former Cumberland County surveyor died yesterday morning after a long illness. Mr. Bryan was born in Great Barrington, Mass., Oct. 30, 1880, son of the late James A., and Nellie Adams Bryan. He was a grandson of the late Clark W. Bryan, first owner and editor of Good Housekeeping Magazine. He attended the public schools of Springfield, Mass., and was graduated from Massachusetts Institute of Technology in Boston in the class of 1903. He came to Carlisle as resident engineer when the sewer system was installed in 1913. The following year he opened an office here for the practice of general engineering and surveying. He served as County surveyor for a number of terms. At the outbreak of World War I, he resigned his position as Carlisle borough engineer and volunteered for duty with the U. S. Army. He was a captain in the engineers. After the war he returned to Carlisle and reopened his office.

"He retired several years ago because of ill health. Mr. Bryan was a member of St. John's Episcopal Church here; a charter member of the American Legion Post Number 101 and a past master of Cumberland Star Lodge Number 197, F. and A. M. He is survived by his wife, Mrs. Mary Sharpe Hemphill Bryan; two daughters; four sisters. Funeral services were held in Carlisle and burial in West Chester."

While at the Institute Bryan lived in Springfield, Mass., and commuted every day between there and Boston, and so had no time for extra-curricular activities. Cushman got well acquainted with him, and had a note from him just before our 50th Reunion in which he expressed his sorrow that he could not attend. Claude H. Cooper, III, died in Hancock, Mich., at the Elks Home, on September 30, 1955. His home was in Houghton, Mich., while he was at the Institute, and he was a member of Delta Tau fraternity. During World War I he was a captain in the Coast Artillery Corps, and did service at Portland, Me. We have not heard from him since graduation, and so can add nothing further about him. If Curtis Gray could get additional information as to what he did between 1903 and 1955, it would be appreciated. How about it, Curtis? Fred Eustis attended the M.I.T. Banquet at the Waldorf-Astoria in New York on January 4, and then was going to Florida and Jamaica for the rest of the winter. — FREDERICK A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, Box 103, South Wellfleet, Mass.

• 1904 •

Because these notes fall due on Friday the 13 perhaps some of my readers concur with those people who think that it is bad luck to start anything on Friday the 13. However, I am not one who follows this line of thought. It is time, and unfortunately I do not have very much news from these notes. Much of what I have is not

pleasant news, but the fact that the notes are due on Friday the 13 has nothing to do with these facts; the notes would be just the same amount and kind if they were due on any other date.

I received the following interesting letter from Mrs. Herman O. Blatt acknowledging my letter to her after his death. It gives us some information about our classmate we would not have had otherwise and we are grateful to Mrs. Blatt. "Dear Mr. Stevens: I want to thank you for your kind note of sympathy when Mr. Blatt passed away. I have been away and did not have your address with me or would have written sooner. I met Herman shortly after he was in The Grand Dukes and still have a very good picture of him taken in his costume. We celebrated our 50th wedding anniversary in August and have had a wonderful life together. I have a wonderful family of three daughters and one son and eight grandchildren and am surrounded with love. God has been very good to us and we have a great deal to be thankful for.

"Herman died of coronary thrombosis and did not suffer. Sincerely, Winifred B. Blatt."

Before preparing these notes I talked with O. D. Fellows and find he is finishing preparations for his annual trip to Bonita Springs, Fla. While down there he will visit classmates lucky enough to be living in Florida at the time and before you read these notes.

As is usually the case, I am obliged to record the passing of one of our classmates, the first being Charles W. Elmer of 72 Plainfield St., Waban. I have only the notice from the Alumni office with no details. The next death of record is that of Walter E. Hadley as related by this following clipping from the St. Petersburg, Fla. *Times* of December 13, 1955. He died on December 11. "Walter E. Hadley, 73, retired general manager of operations of the United States Steel Corporation, Chicago district, died Sunday morning in a Tarpon Springs hospital. Mr. Hadley came to New Port Richey three years ago from Newtown, Conn. He was graduated from M.I.T. in 1904 and joined U.S.S. in Pittsburgh then was transferred to a subsidiary company, the Tennessee Coal and Iron Company of Birmingham, Ala.

"From there he went to U. S. Steel's Gary, Ind. plant where he was advanced from assistant blast furnace operator to general manager. He was transferred to Chicago and placed in charge of all U. S. Steel plants in that district.

"Survivors include his widow, Alice F. Hadley; and two daughters."

Walter Hadley was born January 24, 1882, prepared at Rindge Manual Training School, was active in many social affairs at the Institute, and was well loved by everyone.

Another of our classmates who has recently left us is Charles J. Emerson of Winchester, known to us all as "Chick." He had been suffering for some time with a heart condition and his death occurred on January 7, 1956 as related in the following clipping from the Boston *Sunday Herald* of January 8. "Charles J. Emerson, 73, of 31 Everett Ave., Winchester, owner of the Emerson Apparatus Com-

pany, Melrose, died yesterday in Winchester Hospital.

"Born in Pawtucket, he was graduated from M.I.T. and later served as an instructor of thermodynamics there. During World War I, he was dean of the Ground Aviation School at M.I.T. He founded the Emerson Company in 1908.

"Mr. Emerson was a former president of the National Metal Trades Association and was an incorporator of the Warren Institution for Savings. He was a member of the Winchester Country Club."

Chick Emerson was born in Pawtucket, R. I. on April 1, 1882 but he was no April fool joke we can tell you. He took Course XIII and was a member of D.K.E. fraternity.

Today I had a note from Gus Munster, who reports that he has been suffering from hypertension, which has curtailed his activities considerably, but he is now improving and able to be about some. He enclosed a note from Maynard Holcombe, which gave a picture of Holcombe's very attractive place at 125 Alameda Way, Suell Isle, St. Petersburg, Fla. Maynard wrote to Gus as follows: "Congratulations and Merry Christmas. I see by the Tech Review that Winchester has a new bride and here is hoping we may make her acquaintance.

"Guy and Louise Palmer will be in Florida from February 15 to March 8, most of the time at the Haven Hotel, and we will have a clam party for them. Why don't you join us? There are two shuffleboard courts here." I remember that Holcombe et al held a class party last year down in Florida and when he wrote me about it he spoke particularly about the shuffleboard tournament which was "shuffled."

I have had another letter from Elmer (Shorty) Holbrook in which he relates something interesting to happen to him in February, 1956. "It has occurred to me that you and my other classmates may be interested in the fact that the National Founders Engineering Society, American Institute of Mining and Mineral Engineers, has established a National Service Award and citation and the committee and directors have designated me to be the first recipient of the award.

"The citation reads 'For his leadership in teaching and administration in the field of universal industry education; for his administrative service in the field of universal technology, especially as they appertain to research and safety; and for his encouragement, friendship, and inspiration to his many students and colleagues.'" We are all certainly glad to congratulate "Shorty" in this recognition of his ability.

And so with reward for work well done, I will close this issue of notes. I almost forgot to say that Harry Kendall tells me that two more of his grandsons are becoming proficient swimmers and are winning events in meets. These two are aged 7 and 11 respectively and Harry is quite proud of them.

I started off on this job with the idea that this month's notes would not amount to much, but on completion, I think they came out quite well. What do you think? — HENRY W. STEVENS, *Secretary*, 1082 Commonwealth Ave., Boston, Mass.

• 1905 •

While at the Reunion at The Belmont last June there were many comments, such as "Why can't we have another get-together next June." Also as a result of some letters written to classmates (on other matters) during last fall, as well as many Christmas cards sent out, there were several other requests of the same nature. Not a tidal wave or a demand, but still indicating a definite trend. Over the years I have learned to discount these things a bit, but recently in discussing these matters with your new president and vice-president, it was decided that, if there is a real desire to hold a 51st reunion, we can accommodate. Obviously, The Belmont is too large to permit the chummy times we have had at off-year reunions. But we had a grand time (about 25 of us) at the Wianno Club (Cape Cod) in 1953, and Roy Lovejoy, who is a member, can arrange for as many of us as wish (no guarantee required) to meet there on either of the last two week ends in June. Make your plans accordingly.

Ruth and I have to use that wonderful luggage, so we are sailing in mid-April for England, stopping off in Scotland, Wales, Holland and Belgium, arriving at our daughter's home in Weisbaden, Germany early in May, just about in time to welcome grandchild number seven. Official notice of the date will be mailed you by April 1. Your returns will go to one of the other officers for registration (address on the return post-card) and they will take care of the recordings, arrangements, etc.

There is little news to report this month. Claude Anderson, XIII, had a very serious operation in December and was reported about Christmas time as being in a serious condition. Mrs. Anderson was also reported (by Sid Caine) as being seriously ill. Bill Spalding is in Norfolk, Va. at this writing, but by the time you read this he will probably have jumped to his summer home in Canada. Bill says "all ten grandchildren doing fine." Olive Landers writes from Dallas, Texas that Maurice had been in and out of the hospital since last June, at home now, but apparently requires her around-the-clock nursing.

Gene Kriegsman, address 102 West Jefferson St., Boise, Idaho, threatens to write a story for "House Beautiful", telling of the restoration of an old homestead, since they went there on his retirement last fall. Edward S. Baker's new address is 705 Jackson Ave., Ardley, Penna.

James A. Newlands XI died at Hartford, Conn. on December 2, 1955. It is strange to record his death so soon after that of Charlie Emerson's, as they were course-mates at M.I.T. as well as classmates at Beloit College. Jim had had a varied and useful experience in sanitary engineering in Connecticut ever since graduation. He served on many state commissions, conducting investigations on flood control, stream pollution and the protection of water supplies; was president of the Henry Southern Corporation, sanitary engineers, at the time of his death. We have a formal notice of the death of Lewis J. Lyman V, formerly of Everett, Mass., at his winter home in St. Peters-

burg, Fla. — FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin St., Boston, Mass., GILBERT TOWER, *Assistant Secretary*, 35 No. Main St., Cohasset, Mass.

• 1906 •

We are now entering the third month of our 50th year since graduation and our Reunion is three months away. Since we prepared the February notes a few more replies to our preliminary questionnaire have been received. At this time, January 12, we have a total of 44 who plan to take in all or a part of the festivities and they will bring 27 guests; also there are 20 classmates who may come. The final notice for definite reservations will be sent out in early April. In the replies already received some included questions about transportation, etc. These details will be covered in our final letter. The following names of classmates who intend to come should be added to those listed in this column in February: Herbert Dean, William Farley, Burton Kendall, P. J. Kennedy, W. J. Lumbert, Henry Mears, Ralph Reed, Robert Ross, Ernest Smith, Allyn Taylor and James Wick. Readers who received the letter of President Arnold of the Alumni Association will note that the Alumni Day Banquet, which will be the last event on our 1956 Reunion program, will be held on the campus and ladies will be invited. 1906 is one of the classes which has always had the ladies at their reunions so we should favor this change.

Five '06 men were present at the Compton dinner held in New York on January 4. They were Stewart Coey, Harold Coes, Nugent Fallon, Joe Santry and Allyn Taylor. Several of the Boston Classmates were invited including your reporter. The Secretary and Alma, as usual, enjoyed the many Christmas cards sent by classmates. They seemed to be especially attractive this year. The Allyn Taylor's card included a note that they were looking forward to the coming Reunion. I am very sure any one who has been to one of our Class Reunions and is coming to the 50th has the same feeling of pleasant anticipation. Shirley and Mrs. Newton are wintering in St. Petersburg. Frank Benham left January 11 for Daytona, Florida. He took his golf clubs and gave notice he was really going to work on his game while in the south. I wonder if he was thinking about the Class championship. The annual New Year's card of Fay, Spofford and Thorndike includes an aerial view of the Bar Harbor ferry terminal of the new ferry to Yarmouth, N. S. Carroll Farwell is one of the seven partners of this engineering organization; six of whom are M.I.T. men. A very unusual Christmas greeting was a mimeographed sheet from George and Elsie Guernsey with a map of the U. S. at the top of the page outlining the auto trip which they took for six weeks late this last summer. They toured 19 states and 1 province in Canada, covering in all about 8,000 miles. They spent a week in Denver with their daughter Helen, visited the Grand Canyon, Zion Park, Bryce Canyon, Salt Lake City, and Yellowstone, coming home through the Corn Belt and the Great Lakes region.

A meeting of the members of the 50th

Reunion Committee was held at the Faculty Club on the evening of January 13. Those present were Sherman Chase, Herbert Ball, George Guernsey, Tom Hinckley, and the two Secretaries. It was agreed that the immediate need was to concentrate on arousing interest in the Reunion for the purpose of obtaining maximum attendance. Ned Rowe is heading up this activity. This work will be done between now and the last Reunion letter which will be sent out early in April. For those who have already indicated they would come many thanks. The others will be contacted by personal letters, etc. Those who have attended our previous Reunions always left with the feeling they were well repaid for coming. This one will be the best ever, so plan to come and write to your pals of undergraduate days to be present also to add to the joy of the occasion.

Notice has been received of the death of Joseph N. McKernan, I, who passed away in Plainville, Connecticut, November 28, 1955. The following obituary notice is taken from the Bristol, Conn. *Press* of November 29: — "Joseph Newell McKernan, 73, well-known civic, political and fraternal figure died Monday at his home, 153 West Main Street, after a long illness. He was born at Westerly, R. I. on April 3, 1882 and came to Plainville in 1910. He was graduated from the Massachusetts Institute of Technology as a civil engineer in 1906. He had been employed by the Plainville Water Company since 1911, and served as secretary and treasurer before becoming the company superintendent. Mr. McKernan was a member of the New England and Connecticut Water Works Associations, and the Connecticut Civil Engineers and Land Surveyors. He was a town engineer for more than 40 years. He was one of the original members of the Board of Finance; a past president of the Chamber of Commerce; past master of Frederick Lodge, A.F. and A.M. of this town and a member of Pequaback Chapter, R.A.M. of Bristol. He leaves his wife, Mrs. Marguerite McKernan and a daughter, Miss Helen McKernan, both of Plainville." — JAMES W. KIDDER, *Secretary*, 215 Crosby Street, Arlington 74, Mass. EDWARD B. ROWE, *Assistant Secretary*, 11 Cushing Road, Wellesley Hills 82, Mass.

• 1907 •

Carl J. Trauerman, who had been in poor health, due to a serious heart condition, for the past few years, had a severe heart attack on last December 10, rallied and was at work on the 16th, but died at his home on the 17th. Carl received his early education at Pittsburgh Central High School and was with our class at Tech for three years, taking the course in mining engineering. From 1906 until 1920 he was employed in the mining and metallurgical fields in Montana, Colorado, New Mexico, Arizona, Utah, Idaho, Nevada, and California, for a number of companies, his work covering assaying, surveying, sampling, metallurgical research, designing flow sheets and mills, and building and managing mining and milling operational equipment. During this period he also was New York City sales manager for the Independent

Steel and Wire Company, and was a member of the staff of the "Wall Street Journal," in charge of the mining department. During World War I he was a large producer of manganese and was the first in metallurgical history to concentrate pink manganese and make a saleable product of it for use in the steel industry. At this time he also concentrated and sold some tungsten. After 1920 Carl entered the oil and natural gas business in Montana and then went into the stock brokerage business, forming his own firm in Butte, Mont., in 1926. He sold his interest in this in 1938. As a part of his brokerage setup he edited the "Montana Natural Gas Resource Bulletin." In 1935 he purchased and became president of the Ruby Gulch Mining Company, a Montana gold mining venture. During the past thirty years Carl's work was mainly in the business, executive and financial end of mining and other industries. He spoke before a large number of mining associations, legislative and Congressional committees, civic clubs, and other organizations, and some of his speeches and writings made him known in the mining industry throughout the United States. In 1928 he was an alternate delegate to the Democratic National Convention at Houston, Texas, and took the place of a delegate who was ill. He was a member of many professional and business organizations, and his record is contained in the latest issue of "Who's Who in Engineering" and also in "Who's Who in World Jewry." For many years and at the time of his death he was secretary-treasurer of the Mining Association of Montana, 505 Montana Standard Building, Butte, Mont. Carl is survived by his wife, Mrs. Frances Sullivan Trauerman, to whom he was married on April 28, 1913, who lives at 311 Napton Apartments, Butte, Mont., and to whom I wrote a note of sympathy on behalf of the class. Through all the years Carl has maintained a loyal interest in M.I.T. and in '07 affairs. He has been one of our most helpful correspondents in keeping me informed as to the activities of himself and other classmates. He was at one time secretary-treasurer of the Montana Alumni Society of Massachusetts Institute of Technology.

In a note received from Carroll S. Dean last December he wrote: "My wife died in 1947, and I retired from professional work in 1950, after 31 years in Government service. I live with my daughter and her husband at 3714 Underwood Street, Chevy Chase 15, Maryland, and manage to keep reasonably busy. I do a lot of reading and enjoy classical music on my 'hi-fi' music system." As always, the name of Clarence Howe, Minister of Trade and Commerce for Canada, is frequently in the news. Portions of his annual review of the nation's economy, in which he predicted another year of economic expansion and general prosperity for Canada, were quoted and commented on in the *New York Times* of December 28 and also in *Time* issue of January 2, 1956.

In a nice note from Floyd Naramore dated December 14 he wrote: "I am sorry I could not very well attend the last reunion of the class, but I am planning to do so in 1957. This last spring I spent three months touring Central and South

America. In the list of '07 men that you sent me it shows my old business address. The correct address is 904 7th Avenue, Seattle 4, Wash." Floyd is the senior member of the architectural firm, Naramore, Bain, Brady, and Johansen. His residence address is College Club, 605 Spring Street, Seattle 4.

A welcome letter from Willis G. Waldo was received during January. His letterhead indicates that he is a consulting engineer on ramie (a perennial plant of the nettle family with a strong bast fiber) developments. His mail address is P. O. Box 1685, West Palm Beach, Fla. This recent letter was written from Cuba, where he and his wife were temporarily living, while he was working on a professional project.

Stanley Wires, 45 Windsor Road, Wellesley Hills 82, Mass., has told me that in January he presented the greater part of his tile collection, valued at several thousand dollars, to the National Museum in Washington. A room is to be set up there for its permanent display. — BRYANT NICHOLS, *Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary*, 18 Summit Street, Whitinsville, Mass.

• 1908 •

The third dinner meeting of the Class for the 1955-56 season will be held at the Faculty Club, 50 Memorial Drive, Cambridge, Mass. on Wednesday, March 21, 1956 at 6 p.m. Hope you can be with us as we will discuss plans for our Informal Reunion on the Cape June 8-10, 1956. If you have not made your gift to the Alumni Fund won't you please do so right away. Remember that all gifts help to build up '08's 50-year gift to the Institute, so be generous.

We are very sorry to report the death of two loyal members of the Class. Harold P. Gurney on December 31, 1955 at Summit, N. J. and Lincoln Mayo, our Class Treasurer on January 8, 1956 at Boston, Mass. Both were interested in Class affairs and could be depended on to attend Class Reunions as well as our bi-monthly dinners during fall and winter at Boston. We are going to miss them a lot. Services for Harold were held at Waterman's on Commonwealth Ave., Boston on January 4, 1956, with burial at Newton Cemetery in the family lot. Linc Mayo attended, representing the Class. Services for Linc were held at the Arlington St. Church in Boston on January 11, 1956.

"Bunny" Ames, Bill Booth, Les Ellis, George Freethy, Mrs. Harold Gurney and her son James, M.I.T.'45, Winch Heath, Bill Medlicott, Mr. and Mrs. Henry Sewell, Frank Towle and Joe Wattles attended. Your secretary was sorry that a broken leg prevented his attending the funerals. — H. LESTON CARTER, *Secretary*, 14 Roslyn Rd., Waban 68, Mass.

• 1909 •

We were more than pleased to receive the following letter from Albert Barnes, VI, whose home address is now R. R. #3, River John, Nova Scotia. "It was good to hear from you on December 1 and the news regarding my old thesis-mate, Tom

Spooner who, like myself, has taken his retirement. I would appreciate his Florida address as I expect to spend a few days in Florida on my return trip from San Francisco where we will spend the holiday season with my daughter and her family. I retired from active service in November, 1952, after 42 years of service in the communication field with three telephone companies — New York Telephone Company, 1909–1912; Maritime Telephone and Telegraph Company, Nova Scotia, 1912–1924; Bell Telephone Company, Montreal, 1924–1952. On return to my native province, I built a small modern bungalow on the "Sunrise Trail" which skirts the Northumberland Strait's on the northeast shores of this province. I have about two acres of land and a small garden. But my principal hobby is oil painting and I motor around the shores during the summer season and find many interesting subjects for seascapes. So between the cottage, yard, and my painting I never seem to have an idle moment and that is the secret for happiness during retirement days.

"Being on the main paved highway for tourists from Upper Canada and the States we have had a number of visits from old friends motoring through during the summer season. That scenic drive in Cape Breton known as the 'Cabot Trail' seems to attract many tourists to this province. For the past two months many cars with deer and American licenses have driven by headed for home with their trophies. The past season has been an excellent one for the hunters. I trust this small amount of information as to my recent activities will be of interest to you and should you wish more details I would be glad to send them along.

"In closing may I extend to you and any of the Class of '09 that may still be around Boston my best wishes for a merry Christmas and may happiness and good health be your lot for the coming years." It is interesting that the thesis performed by Barnes and Spooner, "Induction Generator" was a study of the short-circuit characteristics of this type of machine and the fact that it had no d-c field to sustain a short-circuit current was considered an advantage. This research was published in the *Electrical World* and reference has been made to it by engineers who have conducted research and written papers on the short-circuit currents of a-c generators.

In the November Review we told of a visit with Kenneth Trimmingham, XIII, while Muriel and I were in Bermuda last May. We have received the following letter from him dated December 19. "The November issue of the *Technology Review* reached me about a week ago and I cannot tell you how pleased I was to see my name in print in that excellent periodical. It was exceedingly kind of you to write the article and I thought it was really 'tops.' I, of course, showed it to the other members of my family and they all wish to express, with me, their appreciation. Perhaps you may be able to make another trip to Bermuda and if so, I hope you will let me know beforehand so that we can get together."

We hear quite frequently from Mrs. Delos (Emma) Haynes. In the past few

years she has traveled extensively and this last year she went around the world. We received a card which she sent from Tokyo. She has just written us that she plans another around-the-world trip, this time going the southern route and including the Fiji Islands and South Africa with no duplication of the past trip. She plans to go by air. She says that this is a big, beautiful world and she wishes to see as much of it as possible while she "can travel under my own steam."

In the last number of the Review we told of the passing of Brainerd Dyer, V. We wrote to Mrs. Dyer at her home in Hudson, Ohio, conveying the sympathy of the class. She has replied as follows. "Your letter was forwarded to Sarasota where I have a house until May 1. Brainerd died March, 1955, at Lakeside Hospital, Cleveland, of a heart deficiency due to a lung condition of five years, emphysema (a hardening of the lungs). We were in California and Mexico (LaPaz) last winter and during the flight home Brainerd had a severe heart attack and at Denver an oxygen hood attached to the auxiliary tank enabled him to get home. He died in an iron lung in a coma. The tired heart couldn't work any more. We had a country place at Hudson, Ohio, 'Folly Farm.' He had many hobbies; perhaps photography and his library interested him the most. As you know, he was a literary snob. He loved the islands of the Caribbean where he spent a good many winters. His business life — National Carbon Company, Cleveland; advertising manager, Aluminum Casting Company, Cleveland; sales manager, Acheson Graphite Company, Niagara Falls; vice-president in charge of sales, Vitreous Steel Products, Cleveland, for 33 years. Brainerd was at his desk until January when we flew to California. He never allowed his physical condition to interfere in any way. As I wrote Kenneth McIntosh, (an Amherst classmate) 'his courage was unbelievable.' He was a gallant soldier." We learned from Brainerd's Amherst ('05) paper that because of an unfortunate accident in his undergraduate days he was handicapped ever after with a damaged leg which at times caused him much agony and suffering, but as Mrs. Dyer wrote he wouldn't give up, refusing a cane or a crutch, and even played a good game of tennis. Tributes from his Amherst classmates and business associates were as follows: "His philosophy on life, his dedication to his principles shall remain a real inspiration to all of us for the rest of our lives" and "no one could meet or talk with this grand person for even a few moments without being impressed by his wonderful character, personality and perseverance, and also being left with a feeling that you were better in some way for having met this man." The Cleveland office of Vitreous Steel Products was shut down for an afternoon as a tribute to his memory.

We have been notified of the death of Edward J. Hooper, III, on November 2 at Nutley, New Jersey. Our records show that he went to Nutley in 1925. We have written to Mrs. Hooper conveying the sympathy of the class. — CHESTER L. DAWES, *Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. *Assistant Secretaries*: HARVEY S. PARDEE, 549 W.

Washington Street, Chicago 6, Ill.; MAURICE R. SCHARFF, 366 Madison Avenue, New York, N. Y.; GEORGE E. WALLIS, Wenham, Mass.

• 1910 •

Through clippings received from the Alumni Office the passing of two classmates has been reported.

From the Newburyport *News* the death of Frederic Castelhun is reported as follows: "Frederic Karl Castelhun, 68, suffered a fatal heart attack yesterday (Nov. 24) noon at his home, 51 High Street, dying within a few minutes. Mr. Castelhun had attended the Newburyport — Amesbury football game. The attack was the reoccurrence of an old condition. The well-known Newburyporter was a retired traffic engineer of the Telephone Company, for which he worked 37 years. He was graduated from Newburyport High School in 1906, and from Massachusetts Institute of Technology in 1910. Organizations with which Mr. Castelhun was affiliated are the Telephone Pioneers of America, Historical Society of old Newbury, and Essex Institute of Salem."

From the Gloucester *Times* the death of Richard Fisher is reported as follows: "Richard B. Fisher of 4 Hovey Street, president of LePage's, Incorporated, died yesterday (Nov. 14) at the Phillips House of the Massachusetts General Hospital in Boston, where he had been a patient for the past week. He had been active until very recently. Richard B. Fisher was born in Gloucester November 11, 1886. He was educated in the schools of Gloucester and Amherst College, class of 1909, and took post graduate work in chemistry at the Massachusetts Institute of Technology. Upon completion of his college education, Mr. Fisher entered the employ of LePage's, Incorporated, and served in the office of production manager, purchasing agent, vice-president, treasurer from 1947 to 1952, succeeding the late Addison G. Brooks. He assumed the presidency in 1952 upon the death of N. Carleton Phillips. His term as president was characterized by a vigorous, forward-looking policy to extend the business of the company not only in the United States but in Canada and Great Britain, in which countries the company has branch plants. Mr. Fisher traveled extensively, not only through his own country but through Europe, and was unusually well informed. At his death Mr. Fisher was president of the Cape Ann Anchor and Forge Company and a director of the Gloucester Safe Deposit and Trust Company. In former years he had served as director of the Gloucester Lyceum and Sawyer Free Library and the Cape Ann Scientific, Literary and Historical Association. He was a former vice-president of the National Association of Adhesive Manufacturers."

On January 4 I had the pleasure of attending a dinner given by the Corporation of M.I.T. at the Waldorf-Astoria Hotel in New York City. It was a most interesting and inspiring affair. Gordon Holbrook and Fred Dewey were other members of the class attending. It has been at least fifteen years since I have seen Fred and it was most interesting to note how time had made but small change in his looks and actions. Jack Babcock spent the Christmas

Holidays in Raleigh, N. C. with his son who is a professor in Civil Engineering at the N. Carolina State College.

I met Arthur Curtis at the Massachusetts Building Congress annual meeting recently, where the members of the building industry meet to compare notes. — HERBERT S. CLEVERDON, *Secretary*, 120 Tremont St., Boston, Mass.

• 1911 •

Just too late for inclusion in last month's class notes, we received this announcement: "Mr. Gilbert Schermerhorn announces the marriage of his daughter, Sarah Elizabeth, to General George Churchill Kenney on Wednesday, the 14th of December, 1955, Washington, D.C." The couple are at home at 38 East Fifty-first street, New York City. It was my good fortune to see George and wish him the best of everything during my annual trip to New York for the Retail Dry Goods Convention, when the American Retail Association Secretaries have their annual meeting.

Sparked by President Don Stevens, II, and spearheaded by Phil Caldwell, I, a most successful "Welcome to Dennie" luncheon was held at the Architectural League, following custom, Tuesday, January 10, with these fifteen classmates present: Caldwell; Kenney; Stevens; Denison; Jim Campbell, I; Charlie Edwards, XIII; Joe Gershberg, VI; Joe Harrington, VI; Mert Hopkins, I; C. R. Johnson, X; Bill Orchard, XI; Dick Ranger, VIII; Pat Russell, II; Isidore Spector, I; Harry Tisdale, V.

Following the social hour just before lunch, we enjoyed another art exhibit, featuring watercolors by Harrington, and Caldwell and oil paintings by Stevens and a recent convert, Bill Orchard — this latter based on a seascape in Maine that was the black and white cover of the March, 1955, *Review*. President Don thanked those who contributed to the art show and said we would hear from each as to their work. He then introduced Phil Caldwell as master of ceremonies and the first talk was by your secretary on progress to date on the 45th Reunion and the current Alumni Fund. The group stood for a moment in respect to the memory of eight classmates who had died in the year just past; Lester Cushman, Coupal, Cheney, Zimmerman, Cumings, Faunce, A. O. Wilson and Marston.

Joe Harrington presented two seaside scenes made at New Harbor, Maine, one original portrait and two copies. He said the hazard of water colors is that you can't make a mistake and correct it satisfactorily. Joe retired two years ago from Standard Oil, but is continuing active interest consulting work for the Baxter International Economic Research Bureau on the engineering phases of atomic energy. Jim Campbell had to rush for a 2:30 plane to New Orleans, but said he is so proud of the fact that his two partners and he are continuing the engineering firm of Eadie, Freund & Campbell uninterrupted now in its forty-second year.

George Kenney, president of the Arthritis and Rheumatism Foundation, gave us a stirring talk on the ravaging effects of these crippling diseases on the industrial life of our country. Some 11,000,000

people in the U.S.A. now have arthritis; 65 percent of them in the 18 to 45-year group. He estimates that loss of employment alone is costing two billion dollars a year. He said that we are all really paying for this, as this means some 120 millions of income taxes have to be made up and 132 millions of welfare work is involved. He added that terrific progress has been made in trying to effect adequate prevention and cure in the past four years and the research work is closely identified with cancer, diabetes and allergies. In concluding his talk, General George said his advice to the medical profession is to first go to M.I.T. or a recognized technical school to learn the engineering approach to problems.

President Don had two countryside scenes, with his trout hole in Saddle River Brook, N. J., outstanding. Don finds lessons very enjoyable as well as beneficial and urged others to try the painting hobby upon retirement. Bill Orchard added his endorsement of painting as a hobby, as he showed his interpretation in colors of a rugged Maine coast scene. As president of a hospital board in Maplewood, N. J., he complimented Kenney on the remarkable work the Foundation is doing. We were all sorry to learn that Mrs. Orchard, who has been in poor health for a long time, died in November. His advice to beginners was to go to an art store and get one of these "number" sets and thus create an initial interest in painting.

It was a real pleasure to see Mert Hopkins, whom we had not seen for a number of years. Reviewing his career, Mert said he spent just over two decades in architecture, then ten years each in engineering and construction and currently he is assistant chief engineer for a firm of mining, metallurgical, chemical and industrial engineers, Singmaster and Breyer, with offices in the Graybar Building. Dick Ranger says he is still expanding Rangertone in the field of television, along with movies, and the Les Paul-Mary Ford program is the latest "convert."

Harry Tisdale came in from Waterford, Conn., for the luncheon and says he is enjoying his life of retirement, now in its third year, immensely. He and Grace have a lovely home there, but his mother, suffering from a broken hip, keeps them pretty well tied down, requiring constant care. Isidore Spector still maintains his own insurance firm, Spector and Chertoff, Incorporated, at 123 William street and Pat Russell continues in real estate. Charlie Edwards is back in the travel game, managing Bellinger Davis Company at 77 East 56th street.

C. R. Johnson seems finally to be coming into his own with his Spencer Products — catalyzing agents for the rubber industry. His son is now joining him in the firm and C. R. reported that General tires now completely use Spencer products. Joe Gershberg said he is now 70 years old and is doing quite a bit of consulting work, following retirement in late '53 from Brooklyn Edison Company. Like Harrington he said he has become intensely interested in nuclear energy.

Phil Caldwell said he succumbed to the painting bug following our January, 1954, luncheon and he shows remarkable progress in watercolors in two years. He ex-

hibited a seascape and two country scenes that really attracted attention and drew praise. Phil plans to retire soon, after many years' service with Robertson Paper Box Company, of which he is currently vice-president. He and "Bobbie" have a lovely home in Wilton, Conn., and he has built up an active mailorder business on golf equipment, also finding time for another hobby: woodworking. He'll never grow old!

Phil presented regrets from a number of classmates, including our honorary member, State Senator "Tom" Desmond '09 and Frank Osborn, III. Norm Lougee, VI, was ill with a virus attack and Bart Nealey, I, is houseridden with arthritis. Dick Gould, XI, Larry Odell, XIV, and Class vice-president, Howard Williams, XI, unfortunately were out of town and Royal Barton, VI, retired, wrote from Koloa in Hawaii: "Jessie and I are enjoying the winter here with daughter, Betty, and her family. Four grandchildren keep things humming! We are enjoying tropical scenery and mountains, with wonderful swimming. Aloha to all!"

1911 was well represented at the Corporation Dinner at the Waldorf-Astoria the first week in January, with President Don, Jim Campbell, C. R. Johnson, Dick Ranger and Emmons Whitcomb (over from Boston) at the 1911 table.

Here it is mid-January and we have heard from an even one hundred classmates regarding chances of attendance at our June 8-9-10 Forty-fifth Reunion at Snow Inn. Harwichport-on-Cape Cod. Three more couples have expressed chances as excellent: Jim and Toni Campbell, I; Bill and Barbara Hodgman, II; and Roy and Ina MacPherson, II, along with stags: Dick Gould, XI, and C. R. Johnson, X. Joe Gershberg, VI, told me at the class luncheon in New York that he now thought his chances were at least "fair" rather than poor as originally indicated and we had word from Armand Peyche, II; Art Rooney, VI; and Bill Whitney, V, that their chances are also fair. Sterling Dyer, II, and Staff Francis, IV, indicated their chances as poor. That gives us 24 couples and nine stags excellent, seven couples and 19 stags, fair, and 41 classmates with poor chances to date.

Congratulations to Luis deFlorez, II, whose Christmas card this season had him spreading cheer on jet-propelled snowshoes, on being named president of the Flight Safety Foundation, replacing Admiral John Towers, deceased. Commenting on this the *New York Times* on January 6 said: "Rear Admiral deFlorez, designer of training devices that simulate flight conditions, is now on temporary duty with the Navy, with which he served in both World wars. In 1944 he won the Collier Trophy for his contribution to the safe and rapid training of combat pilots and crews." The Flight Safety Foundation is a nonprofit organization that promotes safety in all phases of aviation."

As always, it was so nice receiving Christmas cards from so many of you classmates and Sara and I both thank you a lot. Sara's recovery from her broken arm has been greatly handicapped by the fact that she also tore the arm from the socket and that means long weeks of therapy treatment still required. Displaying an-

other talent — Phil Caldwell featured his family card with a fine pen and ink sketch of their Wilton home. Interesting notes accompanied cards from Helen VanTassel and daughter, Nancy (Mrs. Russell Harmon). Russ is an aircraft commander on a KC-97 (air refueling), following two months' summer duty each at San Antonio and West Palm Beach, after long service at the airbase in Omaha. Russ, Nancy, their two youngsters and her mother are now at 4726 Granden Avenue, Riverside, Calif.

A number of you doubtless received the Christmas three page letter from Paul and Ottilie Cushman, VI, describing their late August and early September 17-day trip to Estes Park, Glacier National Park, Banff, Lake Louise, thence a third of the way to Alaska, as far as Jasper National Park, and finally home through Spokane, Portland, San Francisco, Yosemite National Park, Las Vegas (no accompanying financial report!), Hoover Dam, Albuquerque, including the petrified forest and painted desert of New Mexico. They are still square-dance enthusiasts and we'll look forward to their activity at our Reunion the second weekend in June.

Early this year Harry Tisdale sent me a clip from the *American Dyestuff Reporter* for December 5 — picture of our classmate, Sam Hayes, V, Southern Manager of Ciba Company, Incorporated, with office at Charlotte, North Carolina. The picture showed Sam receiving a silver anniversary tray at the Annual Meeting of the Piedmont Section, American Association of Textile Chemists and Colorists. The interesting added fact was that the presentation was being made by AATCC President Raymond W. Jacoby '10, a fraternity brother of mine.

We seem to be doing nicely in Alumni Fund XV and about the time these Class Notes appear you will receive an issue of "Theleverner" giving last minute details from Reunion Chairman Carl Richmond and his committeemates, with a registration slip readily detached, filled out and returned promptly. Please see tht you do this and try your best to be with us at Snow Inn, Harwichport-on-Cape Cod, June 8-9-10 and at Alumni Day at M.I.T. on Monday, June 11 — that's right, eleven! — ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, Framingham, Mass.; JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

• 1912 •

Harold Greenleaf passed away on November 6 at his home in Rock Island, Ill. Tod served as a 1st Lieutenant in the first World War and after discharge worked at the Horst Company for four years and then established his own construction firm which he has operated very successfully ever since.

He leaves a son who has been associated with him and who will carry on the business.

Lester White has moved to his new home at 1230 N.E., 102nd Street, Miami 38, Fla. Lester could not find a house for sale that suited him but did find a house not on the market which he had reproduced on his lot near the ocean front. He says that they have simplified housekeeping as much as possible by installing all

labor saving gadgets and by disposing of many things that they had accumulated over the past 40 years.

Bill Lynch writes from Los Angeles that he has just retired from his position with the Aluminum Company of America and states that if he has the sense to remain idle, he will be in the East fairly frequently. I am waiting to hear from him. He mentions seeing Ralph Ferry in Pittsburgh who is also retiring.

Bill Rhodes writes from P.O. Box 16, Bronxville 8, N.Y. that his present activity involves labor counseling and he often administers fairly strong doses of sociology, psychology, spirituality, the emotional drive, accounting, technology, math, monetary theory, medieval history, ideology, and thinks he may be working into astrology and possibly black magic. With this scope he finds plenty to keep him occupied.

John P. Minton, Course VIII, has recently received a doctor of science degree at Bradley University, Peoria, where he graduated before coming to the Institute to take his degree. Minton is the holder of many patents and publisher of numerous scientific journal papers, having been awarded fellowships in the American Physical Society and Institute of Radio Engineers and the American Association for the Advancement of Science. For many years he was associated with the Magnolia Petroleum Company of Dallas where he directed development work for petroleum exploration. He is now living at 925 Sycamore Drive, Palo Alto, Calif. — FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston 8, Mass. LESTER M. WHITE, *Assistant Secretary*, 1230 N.E. 102nd Street, Miami 38, Florida.

• 1913 •

Here's wishing all of Thirteens — very happy new year. May it be a successful one whether in labor or pleasure. Have you sent in your postal card to me, stating your plans for our Interim Reunion at Coonamessett Inn, Falmouth?????. We have received a write-up from the Wakefield, Mass. *Item* which describes an interesting discourse on "Unidentifiable Flying Objects" (flying saucers), said discourse by our ever humorous Professor Hilding N. Carlson of Boston University, College of Industrial Technology. As you know, Dean Carlson received his S.B. at the M.I.T. in 1913; his S.M. at Boston University: was an instructor at M.I.T. and Wentworth Institute. He is a licensed pilot, a past president of the New England Aircraft School, where he served from 1928 through 1950; a past president of the New England Aero Club; and a past president at the Boston Rotary Club. To quote Fred Murdock: "What a guy is Hildy Carlson! He goes on like Tennyson's brooks, forever! "Our David Stern again made the head-lines in the Boston *Herald* in connection with the dedication banquet for the new addition of the Jewish Memorial Hospital of which Dave is the president.

Of course, you have received Larry Hart's report on 1913's contribution to the 1955 M.I.T. Alumni Fund. Are you or will you send in your contribution for 1956? Will we see you on June 8th, 9th, 10th, and 11th, the date for the 1956 Alumni

Day at Coonamessett Inn, Falmouth, Mass.? Well, the Atlantic Gelatin Corporation honors our boy Joe Cohen by publishing a testimonial in the form of an illustrated pamphlet under the issue of ATGEL TOPICS. This commemorative issue of ATGEL TOPICS portrays Joe's life, education, business successes, religious leadership, and many other accomplishments briefly, with the printed word, sketches, and photographs; worthy of only a man as Joe. We also offer our congratulations to ATGEL's Dedication Issue and I quote the dedication: "It is with great honor and pleasure that we dedicate this commemorative issue of ATGEL TOPICS to Joseph H. Cohen: immigrant; newsboy; tannery worker; streetcar conductor; M.I.T. graduate; teacher; religious leader; founder of Atlantic Gelatin; and General Foods vice-president. As he assumes his new role in life as elder business statesman, we extend to Mr. Cohen, on behalf of all Atlantic Gelatin employees, our best wishes for good health and continued success." Joe, we can add no more, except that your successor, Clement H. Watson must shoot high and often to even approach your accomplishments.

Yes! The holidays have come and gone. I hope you all enjoyed the Yule-tide and survived all other tides. We received several cards at Xmas including those from: The Bonneys; The Mattsons, Bill and Janet; besides one from Jubie Portal. January 4, 1956 was one of the outstanding days in the life of George Philip Capen, the Corresponding Secretary of the Class of 1913. Fifteen Hundred members of the Alumni Association of Massachusetts Institute of Technology including many non-alumni but former friends and associates paid homage to our beloved and deceased president and friend Karl Taylor Compton. The Corporation of the Massachusetts Institute of Technology entertained its guests with a banquet at The Waldorf-Astoria, New York City, followed by a very sterling program entitled "Science The Mighty Multiplier." Dr. James R. Killian, the President of M.I.T. presided and described the new School of Advanced Study to be established July 1, 1956. Dr. Robert E. Wilson, M.I.T. 1916, as a life long friend, gave a most fitting eulogy to the late Dr. Compton. General Robert Cutler of Brookline, Mass., consultant to the National Security Council and former special assistant to President Eisenhower, paid tribute to an outstanding scientist and administrator, Karl Compton. The Class of 1913, M.I.T. were represented by the Honorable Charles A. Edison, youngest son of Thomas A. Edison, and former Governor of New Jersey (Charles); Max L. Waterman of New York and a member of the M.I.T. Corporation; Thomas S. Byrne of Fort Worth, Texas; Geoffrey M. Rollason of Plainfield, New Jersey; Eugene L. McDonald of New York City; Raymond B. Haynes of New York City; also George Philip Capen of Canton, Massachusetts, Corresponding Secretary of the Class of 1913. Received a post card from Charlie Thompson post-marked Beaumont, California, where "Tommy" is spending a month with his daughter Caroll. Well, my fair weather friends and regular corresponding classmates, I guess this winds it up for we are down to the

bottom of the barrel no news — no notes or next month it will not be "facts and figures" but "guesses and rumors." Remember Coonamessett in June. — FREDERICK D. MURDOCK, *Secretary*, 88 Rumstick Rd., Barrington, R.I. GEORGE PHILIP CAPEN, *Assistant Secretary*, 623 Chapman Street, Canton, Massachusetts, Secretaries.

• 1914 •

It is necessary to report that these notes are prepared by the Assistant Secretary because of the temporary indisposition of the Secretary, who, shortly before Christmas, succeeded in making himself the subject of a little medical study at the Phillips House. Happily, the results were favorable, and as these notes are written early in January he is back home spending a couple of weeks resting up before returning to the job. Best wishes to you, Harold, and take care of yourself. 1914 needs you.

January 4 was quite a memorable occasion for the Institute. A dinner was given by the Corporation, at the Waldorf-Astoria in New York, as a memorial to Karl Taylor Compton. It celebrated the completion of the fund raising for the Compton Memorial Building and endowment, to which the 1955 Alumni Fund was dedicated. 1914 was well represented among some 1,500 guests. There were Charlie Fiske, Norman MacLeod, Homer Calver, Chet Ober, Phil Morrill, Roy Parsell, Art Peaslee, Les Snow, Ben Rauber, Seymour Spitz, Bob Townend, and Herman Affel. In addition to a superlative meal, President Killian, Dr. Robert E. Wilson, and General Robert Cutler made inspiring talks which were duly recorded by the daily press.

President Killian announced the initiation of a department for Postdoctorate advanced study under the guidance of Professor Martin J. Buerger. This is another step in keeping Tech in the forefront of technical education and research, in which Harold Richmond and Ray Dinsmore, as members of the Corporation, are playing an important part.

Those of you who have not been able to keep in close touch with the progress of the Institute, as perhaps you might have wished, should be aware that over the years since we graduated it has not only maintained its status as an undergraduate institution as compared with others, but has also become the largest and best equipped graduate school in engineering and physics in this country. To carry on in this increasingly complex technical civilization, both civilian and military, demands more and more graduate study. The proposed school for advanced study is a logical extension of that trend. And — we have got to get this plug in — you also play an important part in furthering this trend when you contribute to the Alumni Fund.

The following are news items collected by Rich for inclusion in this month's Notes:

A very pleasant Christmas card was received from Gerald Collins, who has for many years lived just outside of London. Perhaps Fourteeners will recall that he visited here a few years ago. Collins has now joined the ever-increasing group of Fourteeners who have entered retirement.

He was formerly in the Engineering Construction Division of the British Ministry of Civil Aviation.

An interesting letter has just been received from Jim Holmes. He says, "Mrs. Holmes and I just recently returned from Europe. I was fortunate indeed to be an Observer at the International Conference on Peaceful Uses of Atomic Energy held at Geneva August 8 to 21, 1955. To attend that historical meeting was a profound experience. I believe the results of that Conference, though perhaps not seen immediately by the average citizen, will have a continuing impact for good in the world for a long time to come. After the Geneva Conference, Mrs. Holmes and I made an extensive trip through Europe, including Spain, Portugal, Italy, Tangier, Germany, and England. We were away four months altogether, and I know you understand what it is like to catch up with your work after such a long trip. I am only just now beginning to dig out from under."

Bob Townend has also written, saying that during the fall he and his wife took an extensive vacation trip to Mexico, which he found to be a fascinating place. He took many side trips around Mexico City and enjoyed it immensely. Bob also writes that he is giving up quite a bit of his responsibilities of executive administration and is devoting much of his time to handling several of the more interesting research problems of his company. — H. B. RICHMOND, *Secretary*, 275 Massachusetts Avenue, Cambridge 39, Mass. H. A. AFFEL, *Assistant Secretary*, 120 Woodland Avenue, Summit, New Jersey.

• 1915 •

In next month's column you will read the details of our big New York City Class Dinner held at The Chemists Club there on January 27. Hank Marion and Larry Landers head the Committee that has done such an outstanding job in making this a big annual and successful 1915 party. There will also be a report on the impressive Alumni Dinner at The Waldorf, January 4 as a tribute to Dr. Compton.

After forty years as Alumni, 1915 has come up with a formal Class organization: President, Marshall B. Dalton; Class Agent, Max I. Woythaler; Special Gifts Chairman, Clive W. Lacy; Director and Treasurer, Henry C. Sheils; Secretary, Azel W. Mack.

Abe Hamburg had designed some appropriate monarch-size Class stationery which his son, David will do for us. This will be available, at no cost, to anyone who wants a supply for Class or M.I.T. correspondence.

Max and Clive are doing a monumental job again on The Alumni Fund to keep 1915 right up there with the leaders. The Alumni Conference at M.I.T. last September was an inspiration to all attending and a credit to the Institute to put on such a generous and splendid show. Our Class was represented by Herb Anderson from Philadelphia, Ralph Curtis from Springfield, Henry Sheils, Max Woythaler, Clive Lacy and Azel Mack. We all left with a proud feeling for the amazing and marvelous work being done by our Alma Mater.

Our sad loss of Abe Hamburg has touched us deeply. Herb Anderson writes. "I was in Boston on Saturday and phoned you but you were out. I did call Abe's home and learned of his passing away. Please extend my sympathies to his family which I tried to do to his son who answered the phone. I have pleasant memories of several interesting minutes with him at our Reunion. Abe was a quiet unassuming gentleman whom I appreciate very much and we have lost a most loyal classmate."

Ben Neal couldn't make the Class Dinner in Boston in November but he wrote: "I should have dropped you a line long 'ere this but I am sure you will have the usual heart-warming Reunion tonight in Boston. You may be sure I would have been happy to have been with you but have been away a great deal recently — one week at Delaware Water Gap and Philadelphia — home for a week, and then down to Maine and a Plastic Meeting in Vermont, then back home for a while, and then to the Adirondacks for a week's deer hunting. At the moment, it looks as if I might be on the job for awhile. Best wishes to you and Fran."

Por old "Speed" Swift must be slowing down to low (refers to rate, not character) speed. "Sorry, but I will not be at the Class Dinner for me so don't save any lobster for me. I've just returned from our New London Hospital. Had some jaundice which they thought was an aftermath of my operation in July. I have been all right for a week but am under 'House Arrest' orders for a while. They speak of operating again but we shall wait and see. My Reunion movies were interesting and some day I'll join them up on all our movies. I enclose a few slides. If someone has a reasonably, easy to recognize picture of me, I'll be willing to swap these few slides I took, for it. It seems I did not take one of myself. Give my regards to the gang, yourself and Fran." Can anyone help Speed with a Reunion picture of himself? Just send it to New London, N. H., and he'll get it.

On December 3, Jack Dalton held open house at the new home of his Boston Manufacturers Mutual Insurance Company and Mutual Boiler and Machinery Company. This is an ultra-modern home office building off Route 128 in Waltham, Mass. (suburban Boston). The building is startlingly different and attractive with extensive use of window walls, ramps instead of stairs, and a unique penthouse for employees', cafeteria, lounge and terrace. Jack and Mrs. Dalton graciously received their many friends from M.I.T. and the business world in Jack's dignified office. I thoroughly enjoyed my visit with them and inspection of this modern building. Good luck to Jack in his new quarters.

Jim Tobey writes: "Due to my enforced (!) absence in Florida, I am sorry to say I can't attend the New York Class Dinner on January 27. Here we are escaping the horrible northern climate. I am at 3801 South Olive Avenue, West Palm Beach." How can you feel sorry for a guy like that — how he suffers!

Bill Spencer had hoped to bring his son to last June's Reunion at Coonamessett but couldn't make it. We were all glad to

see Bill there. His son, Dr. William P. Spencer, has made an outstanding reputation as one of the leading pediatricians in Richmond, Va. Congratulations to father and son.

Under the heading of a recent, excellent picture of Larry, a glowing story appeared in a Boston paper: "When I see a man like that, here at campaign headquarters, at a time when he should be either home in bed or in a doctor's office," David S. Bond, chairman of the Business Council declared Wednesday, "I am more confident than ever that the 1955 Combined Jewish Appeal for \$5,055,000 will be an overwhelming success."

The "man like that" is Bernard L. Landers, Vice-chairman of the Business Men's Council and a past chairman of the Combined Jewish Appeal's Chemical Division. The nattily dressed Mr. Landers, a fresh flower in his lapel, was quite striking. Bernard Landers has been working, in quiet fashion for the Combined Appeal for several years. Mr. Bond states that long before the 1955 campaign was even in the planning stage, Bernard Landers was mapping a new course for his division. Campaigning is not a new thing for this M.I.T. (Class of 1915) graduate. Mr. Landers, the permanent secretary of the English High School Class of 1911 (he has yet to miss a single reunion of this loyal class), enjoys a national reputation in the chemical field. He is vice-president of the world-famed Philipp Brothers Chemicals Company. He spends considerable time in travel to the firm's various offices scattered across the nation. When he is not relaxing on the golf links, he is out in his spacious garden, observing the progress of growth of his rare lilies and roses. His major avocation is horticulture and it is unlikely that he can be stumped by garden experts on the fertility of lilies or roses. He is a member of Temple Emanuel, Newton, of the Stein Club of M.I.T. and a charter member of the Drysalers Club of Boston, a society of the manufacturers of dye stuffs. He is also a founder of the New England Chemical Club and a member of the Chemists Club of New York and the M.I.T. Club of New York.

Mr. Landers looks forward to next May's reunion of that grand bunch of English High 1911ers "because right after that reunion, I'm going to do what I have dreamed about for a long time. I'm going to Israel."

Larry works and contributes in the same unselfish and willing way for all Class and M.I.T. activities. Nice going, Larry!

In explaining why he sent this piece about himself, Howard King is unduly modest. Howard is with Mason and Hanger — Silas Mason Company Incorporated, 500 Fifth Avenue, New York 36: "Your reporting of the Reunion in the November Review was complete and interesting. I am sending you a recent copy of 'Holing Through' a leaflet distributed by an organization of construction men known as 'The Moles.'" With a fine picture of Howard, it says: "A man who spent the first five years of his working life teaching school and helping out around the dean's office is being honored with the 1955 Moles Award for his ac-

complishments in a field about as far removed from academic matters as you can get — digging tunnels under river bottoms! 'There's something dramatic and challenging about compressed-air subaqueous tunnel work,' says Howard King, 'probably because every move has to be right the first time, and all the time, 24 hours a day.'

"Howard has been meeting that challenge in his quiet and dignified way for nearly 40 years. For the last 25 years he has been with Mason and Hanger Company, for which he is now vice-president and chief engineer. He has played an important part in many of the best-known underwater and underground routes by which people move into and out of and up and down the isle of Manhattan.

"Howard has been a Mole since 1939, and was trustee in the years 1943, '44, '45, and '46. He is a member of the American Society of Civil Engineers and the Engineers Club. His home is in Port Washington, Long Island."

Sam Eisenberg, President of the Massachusetts State Association of Architects, a chapter of the American Institute of Architects, was recently appointed by Boston's Mayor Hynes, a member of the Zoning Board of Boston for a five-year term, and architect for one of the new Boston parking facilities on the new Central Artery traffic tunnel downtown. A recent Boston newspaper had a fine picture of Sam posed with Mayor Hynes at the Caravan of Quality Building Products and Modular Application. Congratulations, Sam, and keep up your good civic interests!

Swell notes this month, eh? Well, for next month Carl Dunn has really "helped Azel" with a series of fascinating and picturesque cards and messages from his recent round-the-world-trip. Go thou, and do like-wise — I mean, "help Azel." — AZEL W. MACK, *Secretary*, 100 Memorial Drive, Cambridge 42, Mass.

• 1916 •

The Class was well represented at the dinner given by the Corporation on January 4 at the Waldorf-Astoria. We were of course pretty much in the limelight inasmuch as Bob Wilson was one of the two principal speakers and gave a brilliant presentation in the nature of a recital and tribute to Karl Taylor Compton. He introduced a spot of humor here and there and one we seem to remember is that if Isaac Newton had been in the government, there would have been no law of gravity; instead, nothing but a series of daily, weekly and monthly reports on the number of apples falling on peoples heads. Those in attendance included: Joe Barker, Bill Barrett, Steve Berke, Art Caldwell, Jap Carr, Howard Claussen, Harold Dodge, Jim Evans, Hovey Freeman, Russell Lowe, Herb Mendelson, Dave Patten, Al Pettee, Stew Rowlett, and Duke Wellington. Then of course, there was Steve Brophy who was seated on the dias. Steve was the chairman of the Committee of the Corporation in Charge of Arrangements for this dinner. The night was right foggy and several couldn't make it, including Jack Freeman, Earl Mellen, Len Stone and Ralph Fletcher. Ralph generally comes

down by plane but this was one night when there was no travel. All airports were closed in the New York area as well as in Boston.

We have a bit of additional news about Tom Holden that we don't think has been noted before in our column. Aside from being vice-chairman of the F. W. Dodge Corporation, he is vice-president and trustee of the John B. Pierce organization, a non-profit technical research agency in the field of heating, ventilation and other developments pertaining to comfort in human habitations. He is also Director and an Executive Committee Member of the First Federal Savings and Loan Association of New York. Tom suggests that it must be a bit discouraging trying to round up news items from "dilatatory guys like me," but we can answer that as long as we get replies we are quite happy to continue begging for more and more news. Congratulations, Tom, and remember you are to be one of the 100 or more at the Reunion in June.

Bill Brown is the subject of this news release which we recently received: "Colonel William G. Brown, an aircraft instrument pioneer whose military aviation background dates back to World War I, retired from the Air Force on November 30. He had been Technical Director of the Wright Air Development Center Directorate of Research since August 1953. He began his aviation career with the U. S. Navy in 1918 during the development period of airplane instruments. Through 37 years of aviation experience, Colonel Brown has been a military scientist, instrument pioneer, and college professor. In his work he has associated with such people as Orville Wright, Alexander P. deSeversky, Lt. General James H. Doolittle, General Benjamin W. Chidlaw, Dr. Vannevar Bush and Charles F. Kettering. Colonel Brown has served with the National Advisory Committee for Aeronautics and the Guggenheim Foundation. He began his aviation career after receiving a bachelor of science degree in physics and a master of science degree in aeronautical engineering from Mass. Institute of Technology. He headed instrument development work for the Navy and helped make the first accurate measurements of the loads encountered by airplanes in flight. In 1919 he participated in early experiments with the automatic pilot. From 1920 to 1924, Colonel Brown was in charge of flight test and instrument design for the National Advisory Committee for Aeronautics. At NACA he was associated with Mr. Wright in the development of flight instruments. He was assistant professor of aeronautical engineering at M.I.T. from 1924 to 1929. General Doolittle and many other of today's important scientists were among his students. In 1927 he entered the Air Force Reserve. Colonel Brown played a key role in the first all-instrument blind airplane flight at Mitchell Field in 1929. Employed by the Guggenheim Foundation at the time, he worked with then-Lieutenant Doolittle in developing instruments for this first blind flight. From 1933 to 1940, Colonel Brown served as professor of aeronautical engineering at Louisiana State University. During World War II, the colonel was deputy to General

Chidlaw and served as liaison officer with the National Defense Research Committee, Office of Scientific Research and Development, National Inventor's Council, and the Interdepartmental Committee on Scientific Personnel, all in Washington, D.C. In this assignment he worked to expedite scientific development during the war, and was associated with Dr. Bush and Dr. Kettering. Following the war, Colonel Brown was the Air Materiel Command liaison officer with the Bureau of Aeronautics and Office of Naval Research in Washington, D.C. He then spent six years with the Research and Development Board, working on the Basic Physical Sciences Committee and the Fuels and Lubricants Committee. In 1952 and 1953, Colonel Brown served first as Special Assistant to Commanding General James F. Phillips and later as Assistant to the Technical Deputy at the Air Force Cambridge Research Center, Cambridge, Mass. Congratulations on a fine record of service to our country and to the advancement of air travel, Bill. Hope we will have the pleasure of seeing you at the 40th Reunion.

Doug Robertson writes: "My company, Mount Hope Machinery Company, moved into a new building in 1950 in Taunton, making labor saving and production increasing devices for the Textile, Paper and Plastics Industries. Last April, we started a branch in Charlotte, North Carolina. My wife and I went over to the Brussels Textile Fair last July and visited England and France also. It was a business trip and was much too rushed. Actually, only ten days. We lost two days at the start because of mechanical trouble on the plane we were to go on. I am looking forward to our reunion in 1956 and will make a definite effort to be there." Thanks for writing, Doug, and we'll be looking forward to seeing you in June.

Izzy Richmond responded to our plea for news with this one: "During the past year, three nice things have happened to me. At the Minneapolis Convention of the American Institute of Architects last June, I was advanced to 'Fellowship' for achievement in design. During the Arts Festival in the Boston Public Garden last June, my pencil portrait of 'Facades of Beacon Hill' won first prize in the public acclaim competition. In November of this year, Mayor John B. Hynes appointed me commissioner on the newly formed Beacon Hill Architectural Commission. Our office is humming with projects of various kinds, schools, college buildings, factory buildings, libraries, and various kinds of institutions. My family is well and happy. Jean is now a sophomore at Wellesley. Please give my kindest regards to all our classmates." Thanks Izzy and we know you are counting on being with us for the 40th. We noticed that on Jan. 10, Izzy addressed the Illuminating Engineering Society, New England Section, on the subject, "Architectural Trends in Modern Building Lighting."

We have a couple of follow-up items from the New York Class Dinner in January. Allen Pettee sent us his regrets at not getting to the dinner because a severe cold hit me on Thursday which made it impossible to be there. We were sorry not to see you, Allen, but we sincerely

hope that you are now long rid of the cold and in the best of health and looking forward to the big weekend in June. And this little poem honoring Dina Coleman's story-telling art was composed at the dinner: "The Count's speeches are full of spark. . . . They never leave you in the dark. . . . His stories may stun. . . . But they're really in fun. . . . And none of them came from the ark."

We were very happy to receive greeting cards for the Holiday Season from: Ed Weissbach, Cy Guething, Nat Warshaw, Bill Drummey, Steve Whitney, Bill Barrett, Irving McDaniel, Joe Minevitch, Steve Brophy, Vert Young, Dan Comiskey, Al Lovenberg, Herb Gilkey, Hal Neilson, Izzy Richmond, and Joel Connolly who wrote from Oslo, Norway: "We are now stationed in Formosa. Just now we are on our way to the U. S. for home leave."

Another column becomes history, and we want to thank all of you for continuing to write us and giving us the news so necessary for an interesting column. Remember the 40th Reunion June 8, 9 and 10, 1956 at the Oyster Harbors Club in Osterville, Mass. on the Cape. Let's make this the largest group of all our Reunions. Plan to be there then. — RALPH A. FLETCHER, *Secretary*, P.O. Box 71, West Chelmsford, Mass. HAROLD F. DODGE, *Assistant Secretary*, Bell Telephone Labs, Incorporated, 463 West St., New York, N. Y.

• 1917 •

The following appeared in the *New York Times* of November 6: "Alfred K. Althouse, Sr., President of A. K. Althouse and Company, coal dealers, died yesterday at the age of 59.

"Mr. Althouse, who lived in Colonial Village, a suburb (of Philadelphia) also was president of several mining companies. He attended Mercerburg Academy and graduated from M.I.T.

"Surviving are his widow, Mary; a son, Alfred K., Jr., and two daughters, Elizabeth C. and Mary Anne." Time marches on.

We need the assistance of those who, according to our thirtieth anniversary class report book, are recorded as having been born, but without being specific about the month in which the event took place. This deprives us of the opportunity of writing you a birthday note, and deprives your friends of the opportunity of hearing from you in these columns. If you enjoy reading about your classmates, and do not get a reminder from us, be a good sport and bring us all up to date about yourself, your family, your business, or outside interests.

I. B. Crosby telephoned that he was scheduled to leave on the day after Thanksgiving for northern India where he would go to the site of the Bahkra Dam. This is in the Punjab on the Sutlej River and is 680 feet high according to the plans now. The river flows into Pakistan and has been the subject of controversy between India and Pakistan. I. B. Crosby will not be involved in that aspect, but is going as the world's most famous expert on dam sites.

He leaves for two months and will be in the employ of the government of Punjab, and tells me that the temperature at this point runs between 40° and 70°. He

had recently returned from the Belgian Congo, landed during a hot spell and said he wished he had stayed there until the heat was over. The site there was at a 5000 foot level on a plateau and the climate so desirable that many wealthy Belgian families retire to spend the balance of their lives there.

Ray Brooke says, "who could resist the Sec's persuasive request for info; plus aid and abetment to Ray Stevens, by telephone from Win McNeill; plus a verbal emphasis from Dix Proctor in person?" So, by way of compliance Ray herewith admits he's had an enjoyable, a charmed and a satisfactory life wherein all the good and all the bad are in reasonable balance. He has the philosophy that is easily summed up by, "as long as my health is good and I retain a sense of humor I can do anything I want to stick to doing."

He states that he got a kick out of doing the chore of the introduction for the 1917 30th anniversary report. Bringing his personal story up to date from that milestone he relates "still with a great organization — Bell Telephone Laboratories. After slightly more than 18 years in technical staff work the transfer to laboratory staff now has encompassed over 9 more." At present he is Publication Manager at the Whippany, N. J. Laboratory with "never a dull moment in what amounts to public relations type endeavor." Residence, as for the past 26 years is still Short Hills, N. J. where you will find him, Ruth Brooks and son, Peter.

He claims to be still nonplussed, as is everybody else, by what turned out to be the cold war tempo of living. He would like to settle somewhere in one of the New England States if he finds a place like the farm he had for nine years in southern Vermont. So he is looking around a bit more intensively on this particularly noteworthy project. Incidentally, Ray has been an honorary secretary since April 1937 and he did his stint on various committees and held various offices including that of President of the M.I.T. Club of Northern New Jersey. He renewed his spirit by roaming the campus in Cambridge in attendance at the First Alumni Officers Conference Meeting last September. He looked fine as we saw him at that time and fully recovered from the several spinal operations he underwent in '40-'42.

From Harry Wansker: "I have thoroughly enjoyed reading about the activities of the 17ers. Many of them I am hoping to see, whenever in my travels, opportunities and time permit.

"Your new procedure should give the 1917 Class Notes broader horizons and I hope greater response.

"As for myself, my birthday is November 23. My family consisting of my wife, Isabelle Alden Wansker, my eldest daughter Dorothy, and my youngest daughter Linda, are planning quite a celebration for me.

"If anyone is interested in the Alden family — Isabelle happens to be a tenth descendent of John and Priscilla.

"Dorothy has completed college and Linda is just starting in at the University of Vermont. She is taking the Nurse's Course.

"My job is director of Government Re-

lations for the United-Carr Fastener Corporation is most interesting and I am very happy in the work it involves. It enables me to meet many people and I like people very much. Perhaps that's the secret of my work. I travel extensively, particularly to the research and development centers of the Armed Service Forces. I am frequently in Washington—perhaps spending 50 per cent of my time there. Many bases and facilities which do not have research development activities do have test ranges for new weapons, protective gear and aircraft—the bits and pieces of which the parent corporation, United-Carr, or its subsidiaries are deeply interested in, hence I include these areas in my travels in order to co-ordinate our own programs.

"I am a member of the University Club in Washington; the American Airlines Admiral's Club in Washington, the Wellesley Country Club, the M.I.T. Faculty Club, the Middlesex Club and the Central Club, the last four locally.

"I am a director of the Yankee Post, American Ordnance Association, and their representative in the National Council; a national vice-president of the Armed Forces Chemical Association and a vice-president and director of the New England Chapter. I am on several committees of the National Security Industrial Association; a member of the Quartermaster Association and the American Military Engineers.

"Incidentally, the Armed Forces Chemical Association is having its Eleventh Annual Meeting in Boston on June 14-15, 1956. The Navy will be host—a war exercise at sea on the carrier U.S.S. Tarawa is the only one of the special events planned. All '17 men are invited and if interested I shall be glad to supply complete information."

Enos Curtin says: "The past twelve months have been interesting and hard work. Early in the spring I undertook a four months stint in Europe for the Department of Commerce to 'master-mind' the American participation in 19 International Trade Fairs in England, France, Belgium, Holland, Germany, Italy, Spain, Greece, Turkey and Ethiopia. As this was the United States Government's first participation in such Fairs, the organization problems and procedures were slightly confused. For instance, the Administrative Officer of the Embassy was Disbursing Agent with no definition of his responsibilities and the Consul General, in the particular area in which the Fair was held, was the Contracting Officer for the United States Government and he did not know just what his responsibilities were. However, with a lot of overtime and cable charges, we eventually got things fairly well worked out and I think the final result rated a passing mark. Our Secretary of Commerce, Sinclair Weeks, came over for some of the openings and did a magnificent public relations job.

"The remainder of the year has been devoted to the chore of making a living, except for a week of good salmon fishing in Newfoundland and ten days for a delightful packed-fishing trip in Wyoming, and a nice trip to Havana which was supposed to be work for the American and Foreign Power Corporation, but as far as

I was concerned turned out to be 80 per cent fun.

"My outside interests continue to be about the same with a fair amount of time taken by my job as Chairman of the Board of American Field Service International Scholarships, which this year has 645 teenage students from 22 countries studying in the United States and sent more than 600 American kids to Europe for three months during the summer.

"Due to some efforts to help the Copper Belt in Northern Rhodesia, a few years ago, to produce copper (which we needed for stockpile in the United States), I have had the honor of having a street named CURTIN ROAD, in the town of Chibulma which is just about in the center of 'darkest Africa.'

"I still manage to get in a little squash, racquet, tennis, swimming, riding and sailing."

A brief note from Ken MacPherson: "I am still seeking some real success but feel on the up and up. My fruit picking etc. pays well as far as health goes. After inventing the present improved Carter's 2-liquid Ink Eradicator (1940), out of many ideas I invented a fountain pen guard to improve the writing point. However, things in general and ball points pushed my pen patent, '40, aside. Chemistry was my course, but another diversion is stretchable belt buckles and I have applied for a U.S. Patent."

Harry Toole: "I am now well along in my 33rd year with du Pont engaged in the development and adaptation of textile equipment and special problems related thereto.

"After twenty-four years' service in our Textile Fibers Department Technical Divisions, I became associated with the Engineering Department in 1947 and am now located in the new engineering building at Newark, Delaware with the title of senior consultant.

"I am happy to state that we are all in good health. Our son, Bob, is in the banking business in Buffalo with the Manufacturers and Traders Trust Company and is Assistant Manager of one of their branch offices. We have one grandchild and expect another sometime this month.

"We have enough outside activities to keep us interested in life."

Allen Kingman sends the following: "I continue thoroughly to enjoy retirement, after 26½ years of active Army service. I have no business interests, but seem to be busier than I ever was when I was in uniform. The main advantage to my present life is that we operate now on flexible schedules of our own making and changing. We play a lot of Duplicate and work madly raising flowers in our small lot in this area where the blooming season is almost a year-round affair. Shortly after settling here in Chapel Hill in May 1953, I was taken into the Faculty Club of the University (UNC), whose bi-monthly luncheon meetings, which I attend regularly, enable me to hear fine talks on uniformly interesting and worthwhile subjects, and also to be associated with at least some who are my seniors. I am a member of the mission committee of our small but growing Episcopal Church here, and last May wound up a one-year

tour as president of the Harvard Club of North Carolina. This retired life permits us to make several trips a year to visit our three children and their families and to renew long-time service friendships. Always most enjoyable events.

"Last May also, our second grandson and fourth grandchild was born to our older son, a Regular Army neurosurgeon now heading up that service at Brooke Army Hospital at San Antonio. Our younger son graduated from Northwestern in June and has a job with a finance company in Silver Springs, Maryland. Our daughter continues to live in Newtown Square, Penna., her husband being supervising engineer of the General Purpose Turbine Division at the Western Electric plant just outside of Philadelphia. Those three families are a great joy to us."—R. S. STEVENS, *Secretary*, c/o Arthur D. Little Company, 30 Memorial Drive, Cambridge 42, Mass. W. I. McNEILL, *Assistant Secretary*, 270 Park Avenue (5A), New York 17, New York.

• 1918 •

Part of the garnered harvest of civilization is the physical comfort in which I can sit in front of my fireplace and report, while a raging January blizzard howls down from the shoulder of Mt. Monadnock. I suppose that most of us have lost both our parents before now. I had mine until a short few months ago. Mother died on All Saint's Day in November, and father on January 8. He would have been a century old come February. Both of them had talked to their great grandchildren about how they felt and what they did when Abraham Lincoln was assassinated. Both lived through more than half the life of these United States of America. Both saw more changes in our physical way of life than had taken place from the time of Julius Caesar to the day of George Washington's death. Memory is continually bringing the past into the present, but only by such comparisons can we grasp the encircling rumble of scientific progress which is deafening us to how young we are as a nation and how fast we are travelling in a few specialized fields.

From Ken Reid comes the announcement that he has joined the staff of Ernest J. Kump, architect and planning consultant, as the firm's public relations council and consultant for research. There's a combination put together by someone who failed to detect the divergence of aptitudes required for good performance in each field. We hope ink will flow down Ken's quill to explain further what's cooking. Meanwhile, his communique tells no more except that he personally was unharmed by the holiday floods in California, but the burst of violence with which nature attacked some communities led to disaster enough to cause eye witnesses to stand overpowered and silent. Address Ken at 450 Ramona Street, Palo Alto.

Whenever I finish a book, and it is finally typed, comes a satisfying reassurance like a warm kiss on a cold night, for now I can separate longhand copy, carbon copy, and original, guaranteeing that the effort will not be destroyed in a fire. While stowing the carbon copy of

the most recent effort in the safety of my office files last week, notes made last summer, and since searched for in vain, came to light. Item: Ben Ballantine was in to see us. He has run a machine shop in Fitchburg since World War I, but is now retired and living on the Rindge, New Hampshire, shore of Lake Monomac thus, like me, escaping the Massachusetts income tax collector by a few miles. Ben has two grandchildren, but carries the scars of having lost a thirty year old daughter. He says Sam Chamberlain has a cousin in Rindge. Maybe Sam will be our guest someday. Item: Did you ever wonder by what alchemy Alan Sanger goes by the long and stubbornly held nickname of Pete? It seems that when his older sister first saw her baby brother she said, with direct and crisp description, "Oh, my darling little Peter Punkin!" Thus is refreshing tradition born in imaginative little minds. By dint of intelligent application Pete has built himself an advertising service doing a million dollar business. On the side he has five grandchildren and is running the campaign for our 50-year Reunion fund. Have you attended to your subscription yet? Via Bill Wills comes word that Ned Longley also has five. Beats all how time does aviate. — F. ALEXANDER MAGOUN, *Secretary*, East Jaffery, N. H.

• 1919 •

It was good to see so many '19 men at the M.I.T. dinner held at the Waldorf-Astoria on January 4. Don Way, Charlie Parsons, Edgar Seifert, Ed Flynn, Larry Riegel, Jack Fleckenstein and your secretary spent a very enjoyable evening renewing old friendships. Bill Barrett, Buzz de Lima and Howard McClintic were on the program but we did not see them.

There was a Christmas card from Fred Given with a note saying that he was sorry he wouldn't be able to make the January Alumni gathering.

Lloyd R. Sorenson, who has been Production Manager at the Newport News Shipbuilding and Dry Dock Company in Virginia, writes that they are busy building a big fractionator and doing some other work for the American Oil plant at Yorktown. His big news, however, was that effective January 1, he became vice-president and production manager for his outfit. Our heartiest congratulations to you, Lloyd.

Fred Hewes writes from Los Altos, Calif. that "The Old Year is winding in auspiciously out here in extensive flooding of river valleys and inundation of cities and settlements. The relief works of Civil Defense, Red Cross, Salvation Army and others have been outstanding." Fred and Mrs. Hewes attended the Autumn Dinner of the M.I.T. Club of Northern California on November 16 in San Francisco. The guest speaker was Professor Ashley, Course XVI, M.I.T., and Fred writes that he "gave us a most interesting talk about his contacts with high schools in the Los Angeles and San Francisco areas to further the Institute's policy of broad geographical distribution of its undergraduate. 11 per cent west of the Rockies now." Fred has been in touch with Roger Hall and also tells us that Ed Pickop is enjoying retired life at his home in Hono-

lulu. Thanks for writing us, Fred. It's good to get news from the West Coast, so keep in touch. By the way, Fred's new address is 1195 Thurston Avenue, Los Altos, California.

We were very sorry to receive the news that Merrill Hanley passed away on December 8, in Providence, R. I. He had been Chief Engineer for the Firemen's Mutual Insurance Company in Providence. We extend our deepest sympathies to his wife and daughters.

Your secretary came across an article by Earl P. Stevenson, who has been president of Arthur D. Little, Incorporated since 1935, which appeared in *The County Trust Company publication "You and Your Property"* (December, 1955). It is a very interesting and concise article entitled "The Inventor and the Investor, Partners — or Enemies?" and Earl does a fine job of expressing how the engineers and inventors of this country are filling the need for "broader channels of investment." "An investor will do well to make sure that he is not fighting the best of the scientists, engineers, and inventors, but that he has them on his team." If you'd like to read the good words Earl has to say for us engineers, perhaps you could get hold of a copy of this article by writing to Earl, himself, at Arthur D. Little, Incorporated in Cambridge, Mass. *Chemical and Engineering News* (January 9) also has an announcement of his appointment to the advisory board of Industrial and Engineering Chemistry.

A card from Don and Evelyn Kitchin says that they had Charles and family with them for Christmas and Don, Jr. and family joined them at Thanksgiving. Don, Jr. is a project engineer and lives in Philadelphia. — EUGENE R. SMOLEY, *Secretary*, The Lummus Company, 385 Madison Ave., New York, N. Y.

• 1920 •

The dinner given by the Corporation at Waldorf Astoria early in January brought out an unusually substantial portion of distinguished classmates. At the head table one had no difficulty in picking out the handsome and imposing figure of George Dandrow. Happily assembled at adjoining tables and enjoying the opportunity for a mid-winter reunion were Pete Ash, Bill Barron, Frank Bradley, Ed Burdell, Al Burke, Sam Burr, George Des Marais, Don Dowling, Bob Ellis, Eric Etherington, Herb Fales, Jim Gibson, Dave Kaplan, Charlie Lawson, Chuck Reed, Stan Reynolds, Walt Sherbrook, Harold Smiddy, and Bat Thresher. At other points in the great banquet hall one could find Archie Cochran, Al Glassett and Pete Lavedan. There may have been others but in an assemblage of that magnitude (over 1500), one can be pardoned if they were overlooked. At any rate, it was a great affair and I think I can speak for the above when I say it was mightily enjoyed by the members of the Class of 1920. I am also prepared to testify that the above members looked hale and vigorous and one would find it exceedingly hard to believe that such a group belonged in the oldest quarter of the Alumni, as was pointed out in a recent Alumni letter.

It is pleasing to report that "Skeets" Brown, veteran of 34 years with the Ameri-

can Smelting and Refining Company, has received the recognition that is his due and has been appointed vice-president in charge of all mining operations for the company throughout the world. He will be transferring his headquarters from El Paso to New York so we anticipate more frequent opportunities to enjoy his company. "Skeets" has two married daughters living in El Paso and a son who is attending Pomona College in Claremont, California.

It was also pleasing to see Jim Wolfson's distinguished countenance in a recent copy of the *New York Times* along with the story of his resignation as first vice president of the M. Shapiro and Son Construction Company in order to form his own consulting engineering firm for builders, developers and real estate syndicates in the New York Metropolitan area. Jim admits that another objective of this change is to have a little more time himself, including a vacation in Mexico this winter.

Tony Anable's present address is Old Long Ridge Road, Stamford, Conn. I also have new addresses for two of our classmates located in Puerto Rico. Antonio Ortiz-Del Toro is in Santurce, Carrion Court 16, and Jose G. Piza may be reached at Box 237 Roosevelt, Hato Rey. Professor Francis Sears has left Belmont, Mass., and is now in Hanover, N. H.

It will be sorrowful news for all of us that Clem Hallinan died suddenly on November 22 last. Clem was a resident of Plainville, Conn., and was widely known as a civic leader. He was at one time a member of the Board of Education and the Board of Fire Commissioners there. At the time of his death he was assistant clerk of the Plainville Town Court. He was sales manager of the Charles H. Leppert Company of Hartford. He leaves his wife, two sons, a daughter and three grandchildren.

Your secretary was favored with Christmas cards from K. B. White, as always an interesting and artistic card from France, and from Lee Thomas of 540 Heath Road, Merion, Penna. Lee was thoughtful enough to include a little news and by coincidence he refers to K. B. White and his 13th century castle thirty-five miles from Paris which he is restoring and furnishing in the original period. Lee visited the Whites in France and says K. B. and Denise took time from one of K. B.'s Work Simplification Conferences to show Lee and his wife the countryside and the castle, as well as some of Paris. K. B. is keeping his New York place on the Palisades and his Paris flat as well. Lee also mentioned that he sees Frank Bradley regularly as Frank is a director of the A.S.M.E. A picture of Lee's home is on the Christmas card and it looks to me as if it matches K.B.'s castle in size and impressiveness.

How about you? Pictures of your home or grandchildren or yourself with some news would certainly be a welcome surprise. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

• 1921 •

Only three months to go until our gala 35th Reunion opens at the Sheldon House, Pine Orchard, Conn., on June 8, to extend through June 10, when we will all travel to Cambridge for the big annual party of

the Class of 1921 just before the banquet on Alumni Day, June 11. As these notes are being prepared, another mail notice should be in the making for arrival by the time this appears in print. Reunion Chairman Mel Jenney and his live-wire committee have finalized a top-flight program and have completed all arrangements in detail. All that remains is for you to put Pine Orchard and Cambridge on your itinerary. You are cordially invited to join the representative group and share in the fun of seeing familiar faces and re-living the good times of our undergraduate days. Come and make a trial visit, if you've never had time to attend before, and see what a royal welcome awaits you from everyone. If you're a regular attendee, don't let the fellows down by failing to be on hand this time. In any event, please detach the questionnaire from the mailed notice, complete it for Class records and mail it at once to your Secretary. We'll send you additional forms if you mislaid the mailed ones. Our sincere thanks go to you for making our job a pleasant one and so much easier, with the data you have sent or will send, we hope, right after you read this! For special information on the reunion and related matters, address Melvin R. Jenney, Reunion Chairman, in care of Kenway, Jenney, Witter and Hildreth, 24 School Street, Boston 8, Mass.

Our Class President, Ray St. Laurent, always a regular contributor to this column, has sent several fine letters with the following items: "Albert E. Bachmann has been elevated from executive vice-president to president of the Missisquoi Corporation, Sheldon Springs, Vt. He is also president of Fonda Container Corporation. Both of these companies are subsidiaries of Standard Packaging Corporation, New York City, of which Al is a vice-president and director. He is also very active in the Superintendents Association of the Pulp and Paper Industry. He has a son in the Army, engaged in Operation Sagebrush. Al is definitely planning to be at our 35th reunion in June. He has been corresponding with John Healy of Monsanto Chemical in St. Louis and word has it that Jack will be with us in June, as usual.

"I had breakfast with Dan Harvey, President of the Paul Valve Company. Dan, of course, is planning to be at the 35th. His daughter, Derry, has a pet shop on 66th Street in New York City. Daughter Phoebe lives in Philadelphia. She is married to Bertram Bell, a teacher in Germantown, and they have a daughter, born in January of the year that Eisenhower was inaugurated. Now you know how long Dan has been a grandfather! Bill Rose, who was associated with Dan for several years and who was raising chickens as an avocation at his farm in New Milford, N. J., is now doing it full time. I have also seen Albert J. Hanley, Jr., who is Technical Director of the Respro Division of General Tire and Rubber Company in Cranston, R. I. Al has been with Respro since 1929. He has a son, Albert, who is a senior at Boston College in business administration, and a daughter, Alice, who has finished school and is at home. Al is currently engaged in new developments in thermal plastics."

Donald B. McGuire also sent a most

welcome long letter and we greatly appreciate his kind words. Don says, in part: "I seldom see other M.I.T. men up here in the 'sticks' other than those who are a part of our organization, so that I can contribute little concerning others from the Institute. We do have several graduates associated with our company and it was sometimes a little embarrassing when reference was made at company gatherings in such glowing terms to those with M.I.T. background. I do not know how it made the graduates of the East Burlay Technical Institute feel not to be mentioned, but it certainly made us realize we had a lot to live up to and could be very proud of our heritage. As for me, I am still Chief Engineer of the Rockland Light and Power Company, with headquarters in Middletown, N. Y. At home, I am one of those doting, proud grandfathers. Son Don, Jr., and his wife, Nancy, both graduates of Middlebury College, have two daughters and a son. Don is with Aetna Life Insurance Company in the group division. Daughter Janice, Wheelock College, is married to Paul R. Rothery, Jr., M.I.T. '51, Senior Metallurgist with Hamilton-Standard Propellor Division of Pratt and Whitney Aircraft Corporation. They have a daughter. In my spare time, I keep busy in my basement shop making antique reproductions, mostly in cherry. I have a Leica camera with lots of gadgets that I probably will never be able to master satisfactorily. I want to thank you for writing and to tell you how happy we all are that you have been chosen to be given the first Bronze Beaver Award."

One of the happiest occasions for a Class Secretary comes with the most welcome holiday greetings at the turn of the year. Our special thanks go to Jack Barriger, Max Burkett, Phil Coffin, Bev Dudley '35, Gef Farmer '22, Harry Field, John Frishett '56, Dug Jackson, Jack Kendall, Pete Korn '56, Jack Kriz '41, Chick Kurth, Moose LeFevre, Bill Loesch, Joe Maxfield '10, Don McGuire, Bob Miller, Gus Munning '22, Helier Rodriguez, Ray St. Laurent, Rufe Shaw, Paul Smith '51, Bob Ten Eick '59, Lem Tremaine '23 and Carlton Tucker '18. The illustrated greetings from Marge and Jack Kendall show several views of the progress on their new home at 401 Hermosa Place, South Pasadena, Calif., overlooking the San Rafael hills. Jack notes in the margin that he will see all of us at the reunion. Graciela and Helier Rodriguez, sent greetings to all with a handsome engraving symbolizing Helier's activities and Jack Barriger's good wishes have the homey flavor of a rural station of the Rock Island in Illinois. Betty and Dug Jackson as well as Helen and Bob Miller observed the occasion with beautiful illustrations of their active and attractive families.

Bill Loesch, Manager of Production, Forbes Finishes Division of the Pittsburgh Plate Glass Company, Cleveland, Ohio, wrote a much-appreciated letter, in which he says that he and Miles Zoller, Vice-president and General Manager of Eagle Picher Company, Cincinnati, are going to try to get 100 per cent. attendance of the Betas at the June Reunion. Congratulations from all his many friends in the Class of 1921 go to George Dandrow '22 on his appointment as vice-president for Customer Relations of Johns-Manville Sales

Corporation, New York City. The Simmons News recently reported on a phone call to the college alumnae office from an unidentified executive of an unidentified Boston business firm which was moving its location to Dedham and planning an open house at the new site. The executive wanted to invite the many girls from Simmons who had previously worked for the organization. Hearing their names, he commented that every one was married and the alumnae representative remarked: "We raise our Simmons girls well." Replied the executive: "You certainly do. I was a Tech man. I remember Simmons girls." Now could it be that our . . . hmmm!

Members of the Class of 1921 continue to be recognized by M.I.T. for their newsworthy activities. Excerpted with the Christmas letter to all Alumni from Alumni Association President Dwight Arnold '27 were reprints of Class notes about Ernie Henderson and Bob Moore of the Sheraton Corporation of America, Lieutenant General Dan Noce and the Reverend Williston Wirt. Active in Alumni affairs, as evidenced by the recent issue of the Alumni Directory, are Bill Sherry, who is honored as an Alumni Term Member of the M.I.T. Corporation, Chick Kurth, our Class Representative on the Alumni Council, and the Class officers: Rey St. Laurent, President; Cac Clarke, Secretary-Treasurer; Ted Steffian, Assistant Secretary; Ed Farrand, Class Agent; Bob Miller, Photo Historian; Mel Jenney, Reunion Chairman; Warrie Norton, 50-Year Gift Chairman; and Mich Bawden, Special Gifts Chairman. Mich represents the M.I.T. Club of Cleveland on the Council and Mel represents New Orleans. Other Club representatives are: George Chutter, Newark; Josh Crosby, Bangor; Frank Kittredge, Monterey, and Ace Rood, Indianapolis. Mich is Chairman of the Committee for Nominations for Departmental Visiting Committees. Serving on various of these Visiting Committees are: Jack Barriger, Library; Irv Jakobson, Naval Architecture and Marine Engineering; Helier Rodriguez, Modern Languages. Among the officers of local Alumni clubs are: Vice-president Larry Buckner, M.I.T. Club of Central Pennsylvania; Review Secretary Helier Rodriguez, M.I.T. Club of Cuba; President Sam Lunden, M.I.T. Club of Southern California; Vice-president Jack Whipple, M.I.T. Club of the Philippines; Treasurer Joe Wenick, M.I.T. Club of Northern New Jersey and vice-president Bill Emery, M.I.T. Club of Oklahoma. Among those active as Honorary Secretaries and Educational Counselors of the Institute are: Sam Lunden, California; Ray St. Laurent, Connecticut; Ed Farrand, Georgia; Harry Field, Hawaii; Cac Clarke, Munnies Hawes, Sumner Hayward and Ed Lockwood, New Jersey; Paul Anderson, Irv Jakobson, George Owens, Art Skilling and George Welch, New York; Ray Snow, North Carolina; Wally Adams, Ohio; Glenn Stanton, Oregon; Si Freese and Si Travis, Texas; Gene Rudow, Washington, George Pollock and Holland Robb, Wisconsin; Helier Rodriguez, Cuba. A Warrie Norton is a past president of the Alumni Association.

In addition to Bill Sherry, the official M.I.T. family includes Vic Homerberg, Professor Emeritus of Metallurgy, who is

living in California. Jack Rule and Ed Schwarz are Professors and Mel Jenney is Patent Counsel. Hank Lane is a member of the Division of Defense Laboratories at the Lincoln Laboratory, Lexington, Mass. This is the first year since 1942 that the Second Generation Club of 1921 at M.I.T. has not had an addition to the freshman class at the Institute. Current members of the club at Technology, with father's name in parenthesis, are: Staff, Peter Felsenthal '54 (Bob Felsenthal); Richard F. Jenney '52 (Mel Jenney); Wilfred H. St. Laurent, Jr., '51 (nephew of Ray St. Laurent). Fellow in the Graduate School: Robert M. Kendall (Jack Kendall). Senior Class: Franklin T. Flaherty, Jr., (Frank Flaherty). Junior Class: Peter C. Card (Tom Card); Malcolm M. Jones (the late S. Murray Jones). Sophomore Class: Lee B. Freese (Si Freese); Helen A. Johnson (Algot Johnson); Jonathan D. Senzer (Sid Senzer). A total of 57 sons and daughters of members of the Class of 1921 have now attended or are attending the Institute.

News of the Junior League of the Class includes the announcement by Max and Ethel Burckett of Maplewood, N.J., of the engagement of their daughter, Gail Louise, to William L. Brandt of Baltimore. Gail attended Beaver College and is with the New Jersey Bell Telephone Company. Max just phoned to say that he will try to be with us at Pine Orchard in June. Lee Silverstein, son of Saul and Regi Silverstein, has started something new with his "Dynamic Insurance Agency" in Manchester, Conn., which keeps clients constantly advised of changes in the insurance industry and also takes the initiative in preparing and processing claims. Commander Thomas H. Frost has retired from the Navy and is living in Panama City, Fla. Edwin L. Rose is a construction engineer in Waterbury, Conn., and lives in Middlebury. Lincoln B. Barker, designer for General Electric, has a new address in Schenectady, N. Y. Daniel P. Barnard, 4th, Research Coordinator of the Standard Oil Company of Indiana, now makes his home on Lake Shore Drive, Chicago, Ill. H. Seymour Colton, President of Colton Chemical Company, Cleveland, has a new home in Shaker Heights, Ohio. Morris B. Hart, Secretary of Hart Products Corporation of New York City, reports a home address in Elizabeth, N. J. Dr. Manuel S. Vallarta, Professor at the Technological Institute of Mexico, has a new home address in Mexico, D.F. New addresses have also been received for Clifton B. Morse, Everett J. Wilson and Brigadier General Ludson D. Worsham.

A phone call from Ray St. Laurent as we go to press brought the news that he saw at least sixteen of the Class at the dinner arranged by the Corporation of M.I.T. and held at the Waldorf-Astoria, New York City, in January as a tribute to Karl Taylor Compton, as reported last month. Among those known to have been present were: Bill Sherry, representing the Corporation, and Al Addicks, Paul Anderson, George Chutter, Ed Delany, Dan Harvey, Irv Jakobson, Chick Kurth, Joe Morrell, Warrie Norton, George Owens, Ray St. Laurent, Saul Silverstein, Art Skilling, Roy Snyder and Dick Windisch. It was a wonderful evening.

It is with deepest sorrow that we record

the passing of Alex Wishnew on September 27, 1955, and extend sincerest sympathy to his family on behalf of the Class. He and Mrs. Wishnew were on the Swedish liner "Kungsholm," on a vacation trip to Stockholm. He died suddenly just before they were to land at Göteborg, at the end of what had been a happy trip and the chance meeting with a group of graduate students from M.I.T., returning to their native Scandinavian countries. Alex was born in Brooklyn, N. Y., on January 10, 1898, and prepared for the Institute at Boys High School in Brooklyn. At Technology, he was one of the founders of the chapter of Pi Lambda Phi and a member of the Chemical Engineering Society. He was graduated with us in Course X. Following graduation, he went to Wheeling, W. Va., where he became associated with the Wheeling Tile Company. He established the Decorative Tile Products Company and had been its owner and manager for many years until his death. During the World War II period, he was engaged in the manufacture of butadiene with the Koppers Company in Beaver, Penna. He took an active part in amateur dramatics in Wheeling and was a member of the Board of Directors of Players, Incorporated. He was well-known locally for his humorous stage presentations, which Wheeling audiences enjoyed for many years. He was also active in musical affairs and was a board member of the Civic Music Federation. He was a member of the Handicrafts Committee of Oglebay Park and of the Eoff Street Temple, at one time serving on its board of trustees and as director of a drama and religious reading group. Surviving are his wife, the former Sara Bennett Bloom of Peoria, Ill., whom he married in 1929; a daughter, Delia Bennett Wishnew of San Francisco and a graduate of the School of Journalism of the University of Iowa; two sons, William Alex Wishnew, who has given up the course in architectural engineering he had just started at Illinois Institute of Technology to return to Wheeling to carry on his father's business; and Airman 3c Charles Bennett Wishnew; a brother, Charles Wishnew, and two sisters, Mrs. Irving Edelman and Mrs. John Greene, all of Brooklyn, N. Y. We wish to express our thanks to Mrs. Wishnew for her assistance in preparing these notes.

Urgent reminder: Make your plans now to be with the Class at the Sheldon House, Pine Orchard, Conn., come next June 8, 9 and 10, and in Cambridge on June 11. Please return that questionnaire right away!—CAROLE A. CLARKE, *Secretary*, Federal Telephone and Radio Company, 100 Kingsland Road, Clifton, N. J.

• 1922 •

The Reunion Committee for our 35th on June 7, 8, 9 and 10, 1957 is headed by Co-chairman Parke Appel and Dale Spoor. Be sure to put these dates on your calendar and lay your plans to be on hand.

George Dandrow has been appointed by Johns-Manville Sales Corporation to the position of vice-president for Customer Relations. As a glad-hander from way back, George is right in the proper niche.

From a general perusal of those on hand, it appeared that 1922 was adequately represented at the dinner honoring

Doctor Compton held at the Waldorf-Astoria last January.

Dale L. Maffitt of Des Moines, Iowa died October 22, 1955 and Captain Kermit E. Madden of Newton, Massachusetts died January 2, 1956. Details are not available. Our sympathy is extended to the families of these departed classmates.—C. YARDLEY CHITTICK, *Secretary*, 41 Tremont Street, Boston 8, Mass. WHITWORTH FERGUSON, *Assistant Secretary*, 333 Ellicott Street, Buffalo, N. Y.

• 1923 •

The dinner, "Science The Mighty Multiplier," given by the Corporation at the Waldorf-Astoria in New York City on January 4, was attended by nearly 1500 Alumni. Our Class had the best reunion since 1953 with nearly 30 percent in one capacity or another. The following were present and there were probably others—H. S. Ferguson (XV), H. L. Bond (XV), J. E. Burchard (IV), G. W. Bricker, Jr. (VI), C. V. Chamberlin (IV), Benjamin Cooper (XV), A. W. Davenport (I), P. K. Frolich (X), J. J. Murphy (XV), F. D. Ahern (II), G. W. Gilman (VI), D. B. Joy (XIV), Nicholas Kane (I), E. E. Katwink (XV), B. P. Lane (III), E. McSweeney (XV), C. M. Mapes (VI), H. C. L. Miller (II), Walter Munford (II), H. J. Paletz (II), H. C. Pearson (X), A. S. Redway (XV), T. E. Rounds, Jr. (VI), H. F. Russell (II), L. D. Schmidt (V), D. W. Skinner (XIV), J. W. W. Sullivan (III), R. K. Turner (X), L. L. Tremaine (II), S. B. Metcalfe (III), R. H. Smith (XIV), and J. H. Zimmerman (II). Also present were Henry B. duPont (IX), Bernard E. Proctor (VII), G. A. Johnson (II) and Benjamin P. Lane (II).

If there are any whose names we omitted, we are sorry.

In a brochure entitled, "M.I.T. Alumni Make News," the following were mentioned: Miles Pennybacker (VI), President of the National Association of Independent Business; Per K. Frolich (X), Chief Scientist, U.S.A. Chemical Corp.; Lester Burbank Bridaham (X), author of "Gargoyles, Chimeres and Grotesque in French Sculpture," John E. Burchard (IV), reelected President of the American Academy of Arts and Sciences; Roy G. Rincliffe (X), elected a trustee of Drexel Institute of Technology; Julius A. Stratton (VI), elected Chairman of the Naval Research Advisory Committee, Office of Naval Research. Congratulations to each of you! We are proud of you.

Benjamin Cooper (XV), had a nice write-up in the Sunday *Globe* of Boston, December 11. It seems he is America's number one highway sleuth by virtue of acclamation of state toll road authorities. According to reports, he is the inventor and manufacturer of practically all the toll collection equipment used on most highway bridges and tunnels in the United States. His devices are supposed to block the 139 known ways of attempts to outwit collection and recording equipment. Thank goodness he hasn't blocked the 140th attempt yet! Your scribe was in Governor Harriman's caravan at the opening of the Tappan Zee Bridge over the Hudson River, December 15. What a thrill to go through four toll stations without even stopping, to say nothing of saving

\$1.80! Ben is the one-man owner of the firm of Taller and Cooper of Brooklyn, N. Y.

Harland C. Forbes (II), climaxed a 31-year association with Consolidated Edison in New York City and surrounding areas by recently becoming President of that corporation. He received his S.B. degree from the University of New Hampshire and his S.M. from the Institute where he served as an instructor for two years. Since then he was worked in practically all departments of the organization and had much to do with the change-over from direct to alternating current. He is married to the former Frances I. Ransom of Pittsburgh, Penna. They have two boys—18 and 15. Skeet shooting and fishing are his principal forms of relaxation.

New York papers on December 3 carried the news that W. R. Grace and Company, in a major realignment of officer responsibilities, named Hugh S. Ferguson (XV), Executive Vice President of the Chemical group. Hugh will continue as President of Dewey and Almy Chemical Company division which the Grace organization acquired in 1954. Congratulations!

Henry duPont (IX), a vice-president of a well-known chemical company stated that American colleges and universities of the future must produce leaders capable of reconciling the classic patterns of the liberal arts with the advantages of modern technology. He also criticised the policy of offering education at prices below cost, saying, "lower prices are indeed a laudable aim in business or college, but losing money is fatal for either. I wonder if we're not going to find that selling a \$2,000 college year for \$1,000 to anyone, regardless of ability to pay, is poor economics in the end and may ultimately deprive more people of education than it gives." With the scarcity of technological students, Henry's remarks are thought-provoking.

President Jack Zimmerman has scheduled a meeting of the brain trust in New York City for January 25. It will be reported fully in the April notes.—HOWARD F. RUSSELL, *Secretary*, Improved Risk Mutuals, 15 No. Broadway, White Plains, N. Y. WENTWORTH T. HOWLAND *Assistant Secretary*, 1771 Washington St., Auburndale 66, Mass.

• 1924 •

The Christmas season brought greetings from a great many of you. Maybe it's a sign that spring is in the air, maybe it's advancing years, or maybe it's a desire to emulate the effusions of our worthy president. Whatever the urge: To the Ambachs and Amezagas, the Athertons, Kay and Blay, the Barretts from Cohasset and the Bateses, E. and P. K.; Gordon Billard, the Wolf of Wall Street, the Blakes, off banding birds, the Cardinals (who are birds of quite another feather, especially the male who is both colorful and migratory, and never lacks for words); to the Cohens and Clinton B. Conway, the south-of-the-border Cornishes, the Correales and Dizzy di Somma, our thanks for your holiday wishes. They came too from Massa Geo'ge Fertig and the Henningers, Reading Penna., from the Ilfelds in warm Acapulco, where they're whiling the winter away. (And can't you just see Max

diving off those rocks after the pesos tossed in by gullible tourists?) From publisher Kellogg and Kennedy (miner), came greetings than which there could be nothing finer. The Knights and MacCallums and also Nip Marsh, on a trip to Florida to recuperate from blood poisoning as a consequence of a do-it-yourself accident. Next time he hires a carpenter! "Piles of wishes!" (Dent Massey); the O'Neils' and the Parkers' the Roigs' and Schoolers' and the Frank Shaws' were corkers. Nick Warren from Hawaii, "Here's the spot for Reunion," St. Nicholson Wininger and General Zartarian, our thanks one and all, hope your Christmas was too, and may this year ahead shower blessings on you.

And to those others who were fortunate enough to be skipped in this rather peculiar Littlefieldian effort, congratulations. Your cards fell victim to the discerning eye and sharp scissors of your secretary's young daughter who fancies herself as an art connoisseur. You have been uniquely honored.

Now we can get on to the news. If you were not at the big M.I.T. Corporation Dinner in New York on January 4 you missed a whale of a good show. A lot of '24 didn't miss it, about fifty of us. The dinner was a tribute to Dr. Compton and it was most effectively done. With almost 1600 people there we had little opportunity to get together before dinner, but we were seated together and after the affair was over a rousing Reunion was held in the Waldorf men's bar. Unfortunately your secretary had to catch the Owl just as things were really getting under way. One man who was noticeable by his absence, George J. Fertig. George hopped a plane in San Antonio expecting to reach New York with time to spare. He didn't know the city was closed in tight by dense fog. He circled the city, he was told, and was then deposited in Baltimore just in time to catch a plane back to Birmingham. "My humor has been in bad shape ever since," says George. Hope he has better luck on Alumni Day.

By the way, Alumni Day this year is going to be completely different. All "on the lot" for one thing. No more smoke-filled room at the Statler. Cocktails on the greensward of Briggs Field, a barbecue dinner in Rockwell Cage, no speeches, and an entertainment the like of which we haven't seen for 31 years. Those of you who remember the big All Alumni Reunion of 1925 will have some idea of what it's all about. June 11 is the date. Plan to be here if you can.

From Professor Sam Shulits of Penn State comes a copy of one of his papers reprinted from the transactions of the American Geophysical Union entitled "Graphical Analysis of Trend Profile of a Shortened Section of River." It is a treatise "in the field of fluvial morphology, or the hydraulic geometry of stream channels." If this is in your line Sam will be glad to send you a copy. Anyone know anything about the family life of Everett L. Kochmann? He died last fall insisting he had no living relatives, but the lawyers have uncovered a 1925 marriage record and have a report of a divorce. His will can't be probated until this is cleared up. If you have any information Harris D. Hine-line, 425 Rich Ave., Mt. Vernon, N. Y.,

is the attorney. In mid-January your secretary had the very great pleasure of lunching with Mike Amazaga and his son-in-law, Pepe. Pepe has a frustrating eye condition and they were up here to see a specialist. Since Mike is the Cuban distributor for Westinghouse he was having his troubles at the moment. The long drawn out strike meant that he was getting less and less to sell.

The Cardinals have a houseful again with the addition of a married daughter, her husband and four children. Rather an enforced homecoming. Awakened in the pre-dawn hours by the crying of one of the children, they discovered the house ablaze and were lucky to get out safely, even if bare feet and pajamas were a bit uncomfortable. Very few of their belongings were saved. A round-robin letter from Donald W. McCready, Associate Professor in Chemical and Metallurgical Engineering at Michigan gives a lot of family history. He went to Michigan in '29 to get a Ph.D., has been there ever since. In the last ten years he has had two bouts with T.B. "Don't recommend the disease or final treatment, but I do recommend the training in living of a life in which it is prescribed that you must relax, never get tired and enjoy yourself with moderation. See you at the 75th reunion." A worthy thought.

Among the long-distance jumpers is Warren Hill who has left sunny California (or rather, Los Angeles) and is back East. He's president of the Thermoid Company in Trenton, N. J. Col. John V. Weaver has returned from an APO address to Robins AFB in Georgia. Franklin O. Billings is retired, according to the records, but he's not sitting still. In the last 8 months his address has changed from Montana to Los Angeles to New Jersey to New York and now out to Seattle. He's out-travelling the Ilfelds,

That's it for now, except to assure you that next month it will again be safe to read these notes. The creative urge has gone. You have a promise of straight reporting from now on! — HENRY B. KANE, *Secretary*, Rm. 1-272, M.I.T., Cambridge 39, Mass.

• 1925 •

It is with deep sorrow that the death of William F. Fagan, XV, has to be reported to the members of the Class. He died on December 2, 1955 at his home on Park Place, Pascoag, R. I. At the time of his death, he was State Representative to the Rhode Island General Assembly. A member of the Burrillville Democratic Town Committee for 19 years, he had served as state central committeeman from Burrillville for many years. He was holding his first elective public office as representative. At the November 2, 1954 election he defeated former Republican Rep. Joseph G. Zifchock by 217 votes.

He was manager of the Francis Fagan Company and owner of the Fagan Lumber and Supply Company, both in his native Pascoag. He was graduated from Burrillville High School; Maine Central Institute of Pittsfield, Maine; M.I.T. and held a master's degree in engineering and business administration from New York University.

After World War I, in which he served

with the 14th Engineers Corps, the first American unit to reach overseas, Representative Fagan took special courses at the University of Edinburgh, Scotland. For the last 16 years, he has been a member of the operating committee of the Pascoag Fire District. He belonged to the Holy Name Society of St. Joseph's Church, Pascoag, and was a member of Keegan-Dinagen Post, Veterans of Foreign Wars, of Pascoag and Burrillville Post, American Legion, of Harrisville.

He was a member of the board of governors of the Veterans Memorial Association of Burrillville. He belonged to Pascoag Council, Knights of Columbus and the Pascoag Chamber of Commerce. Besides his wife, Dr. Veronica Barrett, he leaves a daughter, Ann, a student at medical school, three sisters and two brothers.

A note to the M.I.T. Alumni Fund indicates that Pierre Wibaut VI has left Les Exploitations Electrique et Industrielle in Paris and now is attached to the Electrobél, in Brussels, Belgium.

Word has also come through that Irving Symonds III, after spending the last 20 years in Mexico with Cia Minera de Penoles, the company has transferred him back to the States, but his exact location is not yet known. — F. L. FOSTER, Secretary, Room 5-105, M.I.T.

• 1926 •

It's 8 a.m. Sunday January 8 and we have already been up for a couple of hours here at Pigeon Cove. The reason—a new St. Bernard pup. We could not wait until spring so at Christmas Heidi 2nd became a member of our family—our fourth successive St. Bernard. If you have never seen one of these pups you have something in store. At eight weeks they leave footprints in the snow larger than a collie's and what a ball of fur. We did not have an opportunity to weigh Heidi until she was eleven weeks old and her 42 pounds was way beyond our estimates. The night before last we checked her weight again at twelve weeks and found she had gained 13 pounds during the week to 55 pounds! Since to weigh a pup you pick her up and stand on the bathroom scales while holding her it is pretty obvious that my sacroiliac will be kicking up unless I quit right now. I have a friend in the coal business and hope to be able to use his truck scale. We will give you a report in a month—perhaps we should start a pool. I'll give a guess of 80 pounds—it just cannot continue at the rate of 13 pounds per week.

Last Wednesday night, January 4, the Class of '26 had a reunion preview on the occasion of the dinner given by the Corporation at the Waldorf in New York. I'll not elaborate on the dinner because it will be covered in the Review. Also I lack the superlatives. With 1500 men at the dinner some of our class greetings were extremely fleeting. As a matter of fact, your secretary who wanted very badly to see class president Dave Shepard did see him. Dave was milling through the lobby of the Waldorf trying to shed his overcoat and busily talking with a companion. "We will catch him a little later at a more opportune time" was our thought but that was our last glimpse of Dave. Similarly, George Ed-

monds was visible in the distance seated on the dais and we never caught up with him either. But most of the '26 men were grouped at adjoining tables and we at least had a greeting and handshake with them. New York had been fogged in for a couple of days and all planes were grounded but it was amazing how people managed to get there. The only '26 man who was planning to come and was grounded out was Bill Sessions who wired his regrets. Our other classmates present were #1 of course Jim Killian who presided at the meeting and gave a report on the Institute. Jim's announcement that evening of the new school of advanced study hit the papers all over the country next morning—you read about it, I'm sure. The others from the Class who were there are: Barney Gruzen, "Dave" Harrison, Lester Hopton, "Dick" Jones, Bill Kalker, Johnny Spencer, Elton Staples, Earl Wheeler, "Bud" Wilbur, Austin Kelly, Don King, Bill Latham, George Leness, Walter Lobo, Ken Lord, Charlie McCulloch, "Dan" McGrew, Charlie McHugh, Ray Mancha, Ted Mangelsdorf, Jim Offutt, Dudley Parsons, Neil Perdew, Dick Pough, Ben Richardson, Horace Ruggles.

In our quick greetings with all the above there was one common subject of interest—our coming 30th reunion. At this writing there is not much more to be added to previous reports because chairman Cedric Valentine has called a meeting for Jan. 17 at which time committees will be appointed and the Reunion program will really start to roll. Thus you can expect more detail next month. The morning after the meeting enroute to Wilmington we had the pleasure of travelling to Philadelphia in the same Pullman with Dick Jones and Ken Lord and caught up on a great many things. Both men are located in Philadelphia with the companies they joined at graduation—Atlantic Refining and Reliance Electric respectively and both are looking forward to next June. The clipping services brought in a few items this month—more honor and responsibility for Jim Killian who has been appointed deputy chairman of the board for the Federal Reserve Bank of Boston for which he has been a director since 1954. Harvey Culp hit the New York headlines with a lecture he gave on psychology at the Staten Island Museum. Dudley Parsons was elected to the executive committee of the National Public Relations Association.

Now I must confess that I stopped writing Class Notes because of the weather reports so we packed up and headed back for the city. We made it at 15 m.p.h. through terrific sleet over icy roads. Consequently the notes are being finished by the fireside back here in Winchester. Until next month we will be gathering Reunion information for you. See you then! GEORGE WARREN SMITH, Secretary, c/o E. I. Du Pont de Nemours & Co., Inc., Elastomers Div., Room 325, 140 Federal St., Boston 10, Mass.

• 1927 •

We have been advised of the death of John H. Field on February 21, 1955. Death was due to a skull fracture re-

sulting from a fall. I have had no direct word from John but do remember that he left school with every intention of devoting his career to the telephone business. In 1944 he was with the Mountain States Telephone Company in Phoenix and in 1950 moved to Denver, and then in 1952 to Millbrae, Calif.

The first word which we have received with reference to J. Burns McClure is a report in the (Torrington Conn.) Register of an address he made to the A.I.E.E. The following is a partial quote: "Mr. McClure will talk on the progress in power generation and transmission covering such topics as high pressure turbines, liquid filled generators, nuclear power economics, load generation control and high voltage transmission. His vast experience includes design work in the General Electric Company Turbine Engineering Department and the Control Station Engineering Department, working on transmission stability studies and general applications for utility power systems. Mr. McClure has held his present position of manager of power generation engineering since 1949. His headquarters and home are in Schenectady.

The newly named president of the Brockton, Mass. Edison Company is Louis F. Eaton. The following quote is from the Brockton *Enterprise and Times*: "The newly-named president has been connected with Brockton Edison and associated companies since 1926 when, starting as station clerk at the East Bridgewater power station he rose to the post of assistant to the general superintendent before accepting an assignment as assistant to the vice-president in Stone and Webster Service Corporation's Boston office in 1939. In 1942 he joined the staff of Blackstone Valley Gas and Electric Company, in Pawtucket, R. I., leaving that post in 1944 to become assistant general manager of Montaup Electric Company, at Somerset, Mass. He returned to Blackstone in 1946 as division manager in Woonsocket. In March 1953 he rejoined Brockton Edison as operating vice-president.

George C. Houston joined the staff of the General Electric Management Research and Development Institute at Crotonville, N. Y. as consultant-advanced management course. His address is General Electric Company, Crotonville P. O. Box 151, Ossining, N. Y.

Let your Class Secretary hear from you in 1956. — JOSEPH S. HARRIS, Secretary, Shell Oil Company, Aviation Department, 50 West 50th Street, New York 20, N. Y.

• 1928 •

We have two interesting and very welcome letters, one from Bill Hurst in Houston, Texas, and the other from Don Sturznicke who is at Rye, N. Y.

This is what Bill has to say: "It was a disappointment that I was unable to attend our 25-Year Class Reunion. I had looked forward with anticipation and pleasure to meeting with my classmates, but a prior commitment that materialized at the time made it necessary to cancel my plans, much to my regret.

"Occasionally I do get back to Boston, and typical of my traveling, these are one-night stands. But I assure you that the next time I make this trip I shall visit

with you, Ralph Jope, and Jimmy Donovan, to renew the friendships that these intervening years have interrupted.

"Concerning myself, I have resided in Texas since leaving Tech. Texas has never formally adopted me. I am still a Bostonian, an individual point of view that my friends appreciate. Even so, I like the people, that is why I always come home to Texas, and in this respect I subscribe to the political beliefs and passions that have always formed an integral part of this famous state.

"My work, as you may know, is in oil production: this is somewhat of a departure from chemical engineering in which we were trained. I am what is known as a petroleum reservoir engineer, a profession I have followed since leaving school. Basically, it is evaluation of oil and gas properties, although much of the demands made upon me are that of a mathematician, and a portion of my work is in litigations and before regulatory bodies.

"Besides Bill Wood, our classmate, there are few M.I.T. men engaged in the production end of the oil business, as most are to be found in refining, so in this respect I can give little account of others. Nevertheless, Bill and I often meet and reminisce about the Institute."

In the January Notes we mentioned that Don Sturznickle recently had been married. Since then Don has written to give us the story first hand. Here it is:

"Catherine and I met nearly four years ago on February 29, but she let that Leap Year go by and I nearly let another Leap Year come before she at last agreed to marry me.

"An announcement was sent to the Alumni Association, but in case it was lost, the data are: Catherine Elizabeth Howard, married October 8, 1955, Sacred Heart Church, Elizabeth, N. J. We bought a new ranch-type house in Rye, and here we are!" (The address is 105 North Street, Rye, N. Y.)

Catherine and Don, in behalf of the class we offer you heartfelt congratulations and our wish that you will have a long and happy life together! — **GEORGE I. CHATFIELD**, *Secretary*, 49 Eton Road, Larchmont, New York, **WALTER J. SMITH**, *Assistant Secretary*, 15 Acorn Park, Cambridge, Mass.

• 1931 •

President Killian has often spoken of how proud he is that he can always turn to M.I.T. Alumni for help. The recently published 1955-1956 Directory of the Alumni Association shows that many of our classmates are playing a very active role for M.I.T. and for its Alumni Association. Gil Roddy, our Class Representative on the Alumni Council, is currently senior Vice-President of the Alumni Association. Chuck Turner, Reunion Chairman for our 25th Reunion, since 1954 has been a member of the Association's Class Reunions Committee.

Shortly after Dr. Compton came to M.I.T. as President in 1930, the Institute established its first group of Honorary Secretaries, Alumni serving the Institute as "ambassadors of Technology" throughout the United States and abroad. A very large percentage of the students who

have since applied for admission at M.I.T. — if they are distant from the Institute — have been interviewed by one of these Honorary Secretaries. This organization is now developed into the Educational Council whose obligation is to establish and maintain friendly relations with secondary schools and conduct interviews with the students. (During this past year they interviewed nearly 2400 applicants for admission.) Some of our Classmates who are Honorary Secretaries or members of the Educational Council are: Bob Hiller, Burbank, Calif.; John MacBrayne, Savannah, Ga.; Francis Weeks, Highland Park, Ill.; Bill Otis, Moline, Ill.; Al Kaye, Hammond, Ind.; Ed Norris, Portland, Me.; John Turner, Jackson, Miss.; Bob Leadbetter, Montclair, N. J.; Wendell Currier, Haddonfield, N. J.; Davis Lewis, Millville, N. J.; Dave Buchanan, New York City; Emilio Collado, New York City; Charles Gilmour, Charleston, W. Va.; Dave Smith, Milwaukee, Wisc.; and Dick Sundstrom, Stockholm, Sweden.

Our own President, Howie Richardson, is one of the three Alumni Members on the M.I.T. Corporation's Visiting Committee for the Medical Department.

This year's officers of M.I.T. Clubs around the world include the following classmates: Ralph Uhrmacher, Vice-President, M.I.T. Club of Fort Worth; Juan E. Chibas, Treasurer, M.I.T. Club of Cuba; Alvino Manzanilla-Arce, Secretary-Treasurer, M.I.T. Club of Mexico; Albert R. Pierce, Jr., Secretary-Treasurer, The Technology Club of New Bedford; Edward J. Norris, President, M.I.T. Club of Western Maine; J. Howard Arnold, Secretary-Treasurer, M.I.T. Club of Northern California; J. K. Minami, Secretary, M.I.T. Association of Japan; Gordon A. Speedie, Twenty Fifth Reunion Correspondent, 90 Falmouth Road, Arlington, Mass. — **A. L. HESSELSCHWERDT**, *Secretary*, Rm. 1-125, M.I.T., Cambridge, Mass.

• 1932 •

We have got the latest on Don Gilman by way of a note from him to Tom Sears: "Now executive vice president of Warren Steam Pump Company, Incorporated at Warren, Mass. Had to buy 140 acre place to get a house — complete with 14-acre pond (stocked), deer, rabbits, fox, etc. Also space for 9-hole golf course. Please come out to see us and bring your hunting, fishing, golf, swimming, skiing equipment. Don't have time for any of this myself." It is good to have Don back in our territory and we will certainly be seeing him.

I had a good note on Jim Harper's Christmas card from Alaska: "Glad plans are already being laid for the 25th Reunion, and I think M.I.T. is the location to have it. Mrs. Harper and I both like Alaska and are extending our two year tour by six months, returning to U.S. in January '57. It has been — 10 and — 15° for about a week straight now, but no — 30° days so far this year. I have great fun salmon fishing each fall. Do not do much hunting since I contracted frozen feet, first degree, in a duck hunting misadventure last year. Plenty of friends bring us moose, caribou, goat, etc."

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Rene Hochreutiner, Baslerstrasse, 303, Laufenburg, Switzerland, is still manager of the electric power company, Kraftwerk Laufenburg, and is representative of Switzerland in the European organization for the coordination of production and transportation of electricity. He has written that he would like very much to be informed when any of us interested in power come to Switzerland as he would be glad to get together for a visit.

Carroll Wilson continues to take on responsibilities. He has now been made director of the Rhode Island Hospital Trust Company, one of the big banks in the area. From the press notice we glean Carroll's address: Jacobs Hill, Seekonk. Incidentally, we have also learned that Carroll was awarded the U.S. Medal of Merit and was made an honorary officer of the Order of the British Empire in recognition of his wartime services. Congratulations, Carroll!

Alfred Halper has made quite a name for himself as a designer of the new multi-level home. He has just finished an exhibit home at Wayside Acres, Sudbury. Alfred says: "The split-level home is a home that is future-fashioned to overtake tomorrow — built, styled and appointed to challenge any home at any price on any count — yet priced within your reach. It is more than a new home. It's a new concept of modern living incorporating all of the social and technical progress of 20th century America. When we started to build split-level homes in the Oak Hill section of Newton four years ago, this design had already been outselling Capes, ranches and Colonials combined in New York, New Jersey and many Western states. New England, always a slow starter, was still glorifying the conventional ranch. Our model home, however, was so enthusiastically received that every home we have built since then has been of split-level design. I would venture to say that three out of every four homes built in Oak Hill this past year have been some variation of the split-level idea."

Lawrence Wagner reports in as Ocean County Engineer, Court House, Toms River, N. J. He is a deacon in the Presbyterian Church there. His two boys, Lawrence, Jr. and Carl, are now both in High School. Last summer while cruising in his 26 foot Chris Craft he saw Bill Can'ono and his family at their summer home at Harvey Cedars, N. J. Bill is in the contracting business with his father.

Rolf Eliassen writes that: "Henry B. Mitchell, a long-standing member of the Alumni Council, resigned his position as one of the top engineers of the Improved Machinery Corporation in Nashua, N. H., to enter a joint venture in the manufacture of paper mill machinery in Savannah, Ga. Henry writes that he has sold out his interest in that company and has taken a responsible position with a contracting firm engaged in building construction in Chicago. With his background in civil engineering, Harvard Business School education, together with long experience in the manufacture and installation of industrial machinery, he should be well on the way to success in the management of a substantial construction business."

Bill Pearce is in a new activity as a Manufacturers Representative. He still lives at 21 Chestnut Street, Sharon, Mass. Bill is one that would like to have a Class directory, which is something we might talk about at the 25th Reunion. He is definitely planning to come to Reunion.

Just after mentioning Frank Merrill, legendary leader of "Merrill's Marauders" of World War II jungle warfare fame, in last month's notes, I got notice that he died unexpectedly in Florida.

John B. Shannon is living at 425 Westmont Avenue, Norfolk 3, Va.

Captain Charles Crossland is in Canada, 136 Kenilworth Street, Ottawa, Ontario, responsible for coordination of international standardization activities of the Royal Canadian Air Force.

John Calvert is a partner of John Taylor and Sons, Artillery House, Westminster, S.W.1, England. He is married and has two children, a boy, 7, and a girl, 5.

Harold Beizer is President and Chief Engineer of Bellaire Electronics, Incorporated, 62 White Street, Red Bank, N. J., manufacturer of electronic equipment. — ROBERT B. SEMPLE, *Secretary*, Box 111, Wyandotte, Mich. *Assistant Secretaries*: WILLIAM H. BARKER, 45 Meredith Drive, Cranston, R. I. ROLF ELLIASEN, Room 1-138, M.I.T., Cambridge 39, Mass.

• 1933 •

Top honors this month go to Art Hungerford who becomes executive director of the Metropolitan Educational Television Association, with headquarters in New York City. Art has been manager of television for General Precision and comes to his new post with a wealth of experience in the TV field; Art took part in the first live TV program in the United States in 1936 and helped plan NBC's television expansion. The Hungerfords live in Chappaqua, N. Y. with their daughter, Sherry Gale. Miss Dorothea Shanney, a Public Health major in '33, has been appointed chief dietitian of the Brockton (Mass.) hospital after serving hospitals in Cambridge, Townsend (Md.) and at Regis College.

We wonder what the other coeds are doing, and this is a goldplated invitation from your secretaries to come forward with news which we are sure will be welcome to all of your classmates; nothing would please us more than to devote a full issue to the girls, whether it be news of professional perambulations or just plain "dishes, diapers and discipline," activities that have their rewards, ask any apron wearing male member of the class. Westy Westaway was the principal speaker in the late fall at Worcester Tech at a meeting of the Society of Executive Engineers. Westy is a specialist on condensers and centrifugal pumps for Ingersoll-Rand with headquarters in the Boston area. And Gene Sullivan, project manager for the O'Connor Construction Company in Boston, has been named professional advisor to the Woburn School. Gene will help in the planning of the new school facilities. Speaking of valuable volunteer service, Dayt Clewell and Bob Winters are members of the visiting committee for Geology and Geophysics at the Institute; Athel Spilhaus, Dean of the Institute of Technology at the University of Minne-

sota, serves in the same capacity for Aeronautical Engineering. Dayt Clewell turns up on campus periodically; Magnolia Petroleum, (Socony to those of you who live considerably north of Texas!) where Dayt directs research activities, is a member of the Institute's Industrial Liaison Program and Dayt visits us regularly to keep track of things that are cooking in the test tubes. Dayt's two youngsters are in the early stages of high school; his son may well be putting on his father's shoes, he is a radio "ham" at this point.

Bob Winters holds a key position in the Canadian Government and can already (but doesn't) look back on a distinguished career.

Technique is probably the most valuable ready reference for every class secretary; we suggest that you spend a few minutes some rainy evening looking at the pictorial section of the '33 volume; it demonstrates that "boys will be boys" (which may help you to understand your teenagers a little better) and that "tempus fugit" very rapidly indeed and that the price of haircuts has increased almost as fast as the hair line has receded for many of us. — GEORGE HENNING, *Secretary*, 330 Belmont Avenue, Brooklyn 7, New York. R. M. KIMBALL, *Assistant Secretary*, Room 3-234 M.I.T. Cambridge, Mass.

• 1934 •

Frank Baxter has become sales manager for B. F. Marsh Company of Worcester. Selling building supplies is quite a switch from production manager of American Optical Company, where Frank toiled for many years, but he is enjoying it.

We read that Charlie Parker was an official U. S. delegate at a meeting of the steel committee of the United Nations Economic Commission for Europe which was held in Geneva last December. Charlie is assistant vice-president of the American Iron and Steel Institute and is located in New York City.

Thanks to Jink Callan for passing along a letter which he received from Bill Ball who writes, in part, as follows:

"Had lunch with Jean Raymond at the new M.I.T. Club quarters at the Chatham Hotel on Vanderbilt Avenue and 48th Street. The Club is coming along fine. Jean is doing well in the aluminum processing business in Montreal. He is doing a lot of highly specialized work in Anodizing, mirror finishes, and building material processing in aluminum.

"Am still assistant to the director of public relations for Ethyl Corporation and enjoying it very much. Our job is more one of helping the oil industry in every possible way than it is to further our relations with the general public. I attended the M.I.T. dinner at the Waldorf last week and it was quite an affair. At my table during the banquet were John Wood (residential building construction in Decatur, Alabama); Phil Kron (purchasing for Eastman Kodak), and Tim Coleman (Union Carbide, Silicones)."

Amongst those who attended the gala banquet were John Dunning, Radcliffe Edmonds, Frank Feeley, Charles Feuchter, Robert Franklin, G. R. Fugal, Frederick Gans, Henry Humphreys, Eric

Isbister, Wilbur Jones, Samuel Joroff, Peter Kalustian, George Lawrence, William Leete, Donald Lister, Frank Milliken, Anthony Mooradian, John Newell, Jean Raymond and Frederick Vaughan.

I am grateful to Larry Stein for writing a fine letter as a much needed contribution to this column. Here it is in full:

"By the time this is in print many of the Class will have read of the untimely death of Syd Nashner on August 15, 1955. I have just heard from his widow, and I would like to pass along some of the facts, especially to the boathouse gang who knew Syd so well as a hard-pulling starboard man.

"Syd was very much responsible for the success of the new \$25-million refinery at the Sheritt Gordon Lynn Lake project at Fort Saskatchewan, Alta. He had been General Manager since 1953. He had always been in good health, as he was when we all knew him, but about a year before he died he began to show symptoms which were diagnosed as pemphigus. Everything possible was done, but, as Lois wrote, 'it seems now that it never could have ended any other way, though Syd never lost hope and was full of ideas and plans until the very end. . . he kept going, doing a top-notch job, and a very difficult one, for the company, keeping up his spirits and even making me feel there was hope.'

"Syd's wife, daughter Marjorie, 14, son Lewis, 11, and son Robert, 7, live at 225 Kent Place Boulevard, Summit, New Jersey. I am sure they would appreciate a line.

"The only other class news I have is from the Westfalls, John and Francis. They live in West Barrington, R.I. John resigned from Builders Iron Foundry in Providence only after agreeing to serve as a consultant to them when needed, in order to devote more time to his own business. His own firm is Westfall-Chafee Laminates. When I last saw John in November of 1954 he was enthusiastic about making plastic skis. Therefore my guess is that that is one of the company's products. Whatever else they make he will have to tell himself.

"I suppose I might add a bit about the Steins, not having done this in ten years or more. We live in Hingham, Mass., and for those from other parts of the country, that is listed in the Boston phone directory. Therefore we want no excuses from visiting firemen who can't locate us. Jerrie is 'first chair' clarinet in the local civic orchestra. Our family consists of Deborah, 9, Robert 6, and April, 3. Enough to keep us hopping. I am electrically engineering at Sigma Instruments, Incorporated, in nearby Braintree. I cannot speak too highly of the gang with whom I work and the general esprit de corps. Some of you may sense it from our advertising (which I don't write).

"I'm no longer 120 pounds in weight, but bet I can steer a shell up the Charles at the next reunion. Sincerely, Larry Stein."

First unofficial reports on our Compton scholarship drive show a total of \$6,005 received as of the end of last December. This is better than we have been doing, but we have a long way to go! — W. McKAY, *Secretary*, Room 33-211, M.I.T.

News of the Class this month principally concerns the forthcoming plans for the 20th Reunion to be held this coming June. A mailing went out to Class members during December and the response has been excellent, a number of members writing in from all over the United States (and elsewhere) to say that they would be on hand. All told, it looks as though the number of people, about 100 or so, that attended the Fifth Reunion would be exceeded by the number coming this year. All of us look forward to the get-together and the Reunion should be a signal success. If you have not already done so, now is not too late to send your \$10 as registration fee to Mal Holcombe, Aircraft Marine Products, Incorporated, 2100 Paxton Street, Harrisburg, Penna.

Charlie Holman writes from his new address, 2914 Hedgeworth Drive, N.W., Atlanta, Ga., to say that his move to Atlanta from Newark is that of plant manager for Pittsburgh Plate Glass Company. He and his wife look forward to life "south of the Mason-Dixon line" and particularly his responsibility in his new work.

After a long interval of silence, Bob Hannam writes from his new home in Belvedere (near San Francisco) Calif., that he and his wife Betty moved to Belvedere from San Francisco about three years ago and "truly love it here." They bought an older home right on top of the Island at the southern end with a grand view of Raccoon Straits and the North Bay from the back of the house and "from our front entrance, the Golden Gate and the Pacific." Most of their leisure time has been devoted to remodelling, and while not charter members, they are certainly among the most active in the "Do-It-Yourself Club!" Bob writes that after the cessation of the Korean "Police Action" and the curtailment of funds overseas with which to purchase U. S. items, he found his export business steadily declining and two years ago sold out. Since that time he has been with C.I.T. Corporation — industrial and commercial equipment financing (subsidiary of C.I.T. Financial Corp. Main office at 1 Park Ave., N. Y. C.).

Bob states that he sees Win Stiles quite often and Al Horton and Maury Rappoport on occasion. Bob doubts if he will be able to get in for the 20th Reunion in June, since his summer plans are ticketed for a jaunt to Banff and Lake Louise with friends in July. In any event, Bob extends greetings and best wishes to all the 1936 XV'ers!

Larry Kanters writes from his new address, 1323 Pinewood Drive, Pittsburgh, Penna. and his new position with Joseph Horne and Company to say that he has lived for twelve years "with the same woman, but not always in the same place." Not counting his travels courtesy of Uncle Sam, Larry lived in the Republic of Panama, the Golden State of California, the Sovereign State of New York and the Commonwealth of Pennsylvania. And just to prove he and his wife's allegiance to each of these places, a child has been produced in each. Larry states: "Suffice it to say that we are tired of travelling and plan to stay put for a while — I think." Larry's

letter goes on to state that his travelling has been subsidized by various retail establishments, each of which "has continued to prosper after my departure — a fact which I seriously questioned at the time."

At last he appears to have a home with an old-line independent department store, known in Pittsburgh for one hundred and seven years as the Joseph Horne Company. As merchandise manager of the Downstairs Store, he has to maintain a fast and furious pace, but it's fun and he's happy to say, "rewarding." With it all, however, he manages to find time for PTA and the Boy Scouts not to mention "my own little 'troop' at home." In addition he keeps them busy gardening in the spring and summer and skiing in the winter. "In the fall they have to put a new coat of paint on the basement walls."

Larry looks forward to meeting everyone at the 20th Reunion in June.

Bill Fingerle writes to secure material on the Reunion to send along to other Course VI men, specifically Dan Farmer, Len Blakely, Jack Cook, Nick Lefthes, Walt McAdam, Bob Saslaw, Ulans and Wallace.

Bill goes on to state that after graduation, he went to work for the Link Radio Corporation in N.Y.C. as Assistant Chief Engineer. He became Chief Engineer sometime during World War II and spent the years 1940-45 thinking up new ways to confound the enemy (and, probably, our Allies) with radio tubes and related apparatus. He spent the years 1946 to 1951 on television transmitters, radio-sondes, microwave and further military apparatus, mostly multi-channel point-to-point, and was a member of a committee of four which operated the Corporation. In 1949 he married Martha Rice and presently has one son, William Mark Fingerle, four years old. In 1951, as a result of serious differences in policy between Bill and the new owner, the vice-president in charge of engineering and he found themselves on the beach. This gave them an opportunity to do what they had often talked about but never had had the time (or wit?) to do before so together they promptly organized the Budelman Radio Corporation (which turned out its first product a couple of months later), sold their homes in New Jersey and moved to Stamford, Conn. The new company now has 45 employees and has expanded into the multi-channel point-to-point radio, telephone carrier, frequency meter, one-way radio paging and other fields. Among the latter is the "Morrow Mike," the wireless microphone used on the "Person-to-Person" and other TV programs. Upon the untimely and tragic death of Fred Budelman in 1953, Bill became president of the company and has been working at it ever since. Bill says "For the first time in a couple of years, things are really looking up. I may even get to take a vacation this year. (Probably the second week in June!)"

Slim Beckwith reported in on his work as assistant chief of the meteorology department of United Airlines, stationed at Stapleton Airport, Denver, Colorado. Slim is one of the few members of the Class who has been with the same organization ever since graduating from Tech. In

fact, as Slim says, at the time of his graduation he was in Oakland, Calif. on an introductory orientation course for United, and it was only after he finished his thesis experiment in July that he started work with them. Slim tells us that all of his work since 1936 has been in the equipping, staffing and operating of United's Meteorology Department. Starting in Newark — where he made a couple of famous analyses of the weather conditions surrounding the Louis-Baer fight (which only lasted 1½ minutes) — Slim's work took him to Oakland, and Alameda, California where he not only taught for six years in United Airlines Meteorology School, but also met his present wife, Maureen Kidney. As Slim says, not only was his work very rewarding, but also interesting: 80% of the total meteorologists on United's system, which he contends is the finest in the country, were former students of his and Slim's accounts of the unusual meteorology problems in forecasting weather conditions for ferrying B-25's across the Pacific after Pearl Harbor are fascinating — including the story of one air convoy that only reached Hawaii with enough gas to land one of the planes, not even being able to taxi to the hangar — a condition which Slim stated was due to lack of weather stations in the Pacific to give proper information. Slim also has the low-down on why Captain Eddie Rickenbacker's plane fell in the Pacific several years ago. At the present time Slim's coordinating work from the Denver airport takes in all over the United System about once every two or three months and Slim asks any '36 class members travelling through Denver to be sure and look him up so that he can show them over what he terms "the nation's finest meteorology system."

About 18 members of the Class including Aldo Bagnulo, Frank Berman, Tony Hittl, Mal Holcombe, Frank Phillip, Harrison Woodman, Vince Estabrook, Harry Foster, Eli Grossman, Hank Lippitt, Henry McGrath, Brockway McMillan, Harold Miller, John Muma, Rudy Ozol, George Robinson, Ben Sharp, and Bob Worden, attended the Dinner given by the Corporation of the Institute, January 4, 1956 at the Waldorf-Astoria in New York. At this dinner, those present heard President Killian announce the expansion of the Graduate School and the completion of the Karl T. Compton Laboratories. In addition to attending an interesting presentation, the Class members had a fine get-together, checking on Bob Worden's dignified demeanor, what Vince Estabrook intended to do with the class funds now that he is Class Agent, why Ben Sharp never turned up at previous meetings, and what had happened to several others of the group over the intervening period. Loud exhortations were heard on all sides for additional \$10 registration fees for the Reunion and the meeting wound up with most of those present determining to give and promising to forward their \$10 fees to Mal Holcombe. — HENRY F. LIPPITT, 2ND, Secretary, 30 Rockefeller Plaza, New York 20, N.Y.

On January 4 a very important dinner was held at the Waldorf-Astoria. The

theme of the dinner was "Science The Mighty Multiplier." The speakers were Dr. Killian, Robert E. Wilson and General Robert Cutler of Harvard. Many of the fellows who were listed as guests from the Class of '37 were unable to make it for one reason or another; for instance, Art Zimmerman was taken ill the day before and telephoned us that he couldn't make it and bad flying weather for 48 hours before probably affected some of those who would like to have come.

Those whom I did see were Ed Olmstead, Phil Peters, Bob Rudy, George Rundlet, Herm Speh, George Wemple, Wally Wojtczak, Charles Chase, Al Faatz, Dick Gidley, Tom Kinraide, Larry Hough and Ed Howard. We were all highly impressed by the grandeur of the occasion and by the tremendous progress that has been made by the Institute.

Gil Mott, who joined Bridgeport Brass as a trainee after graduation, has been appointed director of engineering and in this new post will be a member of the general staff supervising all engineering activities.

Col. William B. Bunker, commandant of the transportation school, Fort Eustis, Va., has been named commander of the transportation supply and maintenance command.

Some of our members are quite active, such as: John M. Gould, who was re-elected chairman of the Northern New England Section of the American Association of Textile Chemists and Colorists. D. J. O'Connor, Jr., President of the Formica Company, was named to the Xavier University President's Council.

We were saddened to hear of the death of Daniel Tower, curator of the Old Slater Mill Museum. In 1952 he was appointed curator of the museum which is in the same building where America's cotton textile industry was born 160 years ago. He handled most of the work and preparation for the opening of the building as a permanent museum of the early textile industry. Dan was with us for his freshman year but after that transferred to Harvard where he graduated cum laude.

Please note the new address when you all write those newsy letters! — WINTHROP A. JOHNS, Secretary, 766 Hyslip Ave., Westfield, N. J.

• 1938 •

I find that it isn't always necessary to get my news from news items, for occasionally personal contact can make a contribution. A few days ago Jack Chapin stopped by at the office. He was in town visiting with his folks for a few days. He works with the Polymer Corporation in Reading, Penna. He has been promising me for some time to send me a letter for the notes. Perhaps we should continue to hope. Another who was in Boston visiting his parents at the end of the year was Fred Boland. He visited with us in Lexington briefly. Fred changed work a few months ago, and now is in the office of the Quartermaster General in Washington. Fred lives in Baltimore, but wants to move closer to the office.

A Christmas card from Peer Cody brings word that the Codys now have a red-headed daughter, Alison. Peer reports having seen Cliff Graves recently, and claims Cliff is virtually unchanged from

the fellow we knew in the college days.

A brief news item states that Frank Dowding has transferred from Austin to the Houston headquarters of Jefferson Chemical as assistant general manager of the manufacturing division.

We have several notes and letters to report as follows:

Dave Morse: "Personally, our office has been quite busy. Most of the work has been schools, more about one of which later. Also, working with Moran, Proctor of New York, we have been the engineers on the 'Texas Tower' project of which you have read so much lately. The whole project has been so 'science-fiction-ish' that many of us are still not quite sure that it's really there — but contracts are being let for more of them — I guess the things are here to stay.

"Second item refers to one Horace Homer of our class — by coincidence, we are doing the architecture for the Town of Arlington for a school — Horace is one member of the committee. The night we opened the bids, Horace had come up from the Cape — picked up various supplies, including several jugs of one thing and another. The bids were opened, and the low was substantially below the estimate. A celebration was in order — but Horace whipped off to the Cape — complete with locked trunk of his car and the contents thereof unopened. Oh, well, I suppose coffee was just as good.

"Third — I have just accepted an association with S. S. Eisenberg, an architect with offices in Boston. This looks to be quite a fine arrangement, and is the sort of thing I've hoped for for some years, — and I have great hopes for the future. I suppose we'll send out some sort of formal announcement later, but this'll do for now. Probably when I see you in June I'll have much to tell you then."

Bill Whitmore: "P.S. It was a fourth boy — Peter Frederick — born 26 December 55. All doing well."

Norman Leventhal: "I have been doing quite a bit of traveling. We have just completed four restaurants on the Ohio turnpike. Also, we are involved in erecting a housing project of 985 units in San Juan, Puerto Rico. I have occasion to go down quite often frequently."

Vernon Lippitt: "Returned to General Electric on July 1 after two years at Harvard. Turned in my thesis, on 'Determinants of Consumer Demand for House Furnishings and Equipment,' a month ago, and expect Ph.D. in Economics by February.

"We had another baby boy yesterday, making 3 boys and one girl in total. Currently engaged in economic research, forecasting, and consulting in G.E."

Ira Lohman: "We had our fourth child and third girl, Dale Bradford, in April of this year. IBM has recently created a new Military Products Division. I've been named Manager of Customer Relations in the Division's Airborne Computer Laboratory here in Endicott, N.Y. My responsibilities include Contract Administration, Product Planning and Field Service."

The following three notes seem to tie together:

Wilbur Rice: "Forgot when you heard from me last, therefore will provide a brief summary: Have three children —

Cynthia — 7, E. Wilbur, 3rd — 5, Emily — 2, Living in Pownal, Vermont, working for John R. Cook our Classmate who is president of Warren Wire Company. We make various kinds of wire and enjoy doing it. Living in Vermont is very pleasant and we are always glad to see our friends from M.I.T. here at our plant — occasionally we stick a few of them for some wire."

Bob Johnson: "Harison Phinizy has separated from the Service after four years on his second round of duty, most recently as a Lt. Colonel in Air Force, returning to Lockheed in Southern California. Gordon Foote was in Boston recently. He is in Cincinnati with Procter and Gamble. John Cook is the proud father of six — the most recent being his fourth son."

John Cook: "Married, 6 children, live on farm, Williamstown, Mass. President and Treasurer Warren Wire Company and Cook Manufacturing Company. Very busy life. Saw R. B. Young at New Bedford, Mass. — He's in his usual very fine shape. Accompanied H. K. Cummings on our boat down Waterway to Virginia last week. W. C. Rice of our class is Vice President and Director of both of above companies."

Bill Burrall: "I've been with North American Aviation four and a half years now. They have just created three new divisions — Atomics International (Atomic Energy), Rocketdyne (Rocket Engines) and AUTONETICS (Control Equipment). I'm supervisor of Parts Engineering in the Components Evaluation Group, Autonetics. We have girls 10 and 12 years old, and a little boy 1½. My boss is Burk Kleinhof — M.I.T. '39."

John Summerfield: "Am leaving my research post with the U.S. Government to go to work for Rand Corporation, Santa Monica, Calif., as of February 1, 1956."

Arch Copeland: "Still enjoying suburban living in Birmingham, Mich. with wife Jo-Ann and three kids. Have added parakeet to family circle. See Jim Webb now and then. Have run into Howard Milius on several occasions. Jo-Ann and I looking forward to 1958 (20th Reunion). My job still the same with 'Pots and Pans' Revere."

Given Brewer: "Since returning from Europe last year I have made only one trip out of New England and that was a brief visit to Oak Ridge. I have been very busy in running my consulting practice, which as you may know, is experimental stress analysis specializing studies employing electric strain gages and associated equipment. During the last year I tested two helicopters, two trailers, two bridges and a number of other interesting studies. I now have just completed my 100th project in my ten years of consulting practice."

Dick Muther, whose latest book "Practical Plant Layout" was published this year, recently spoke to the Time and Motion Study and Management Clinic sponsored in Chicago by the Industrial Management Society. His topic was "New Approaches to Plant Layout Problems." Dick is Management Engineer with the Vendo Company of Kansas City. Dick says he sees Frank Kearney occasionally when he is in Kansas City. Frank is Sales Engineer for Butler Manufacturing Company and has the Louisiana territory.

Lester Kornblith is chief engineer, Enrico Fermi Institute for Nuclear Studies, University of Chicago. Always glad to welcome Classmates at the Cyclotron Building — or at his Chicago "South Side" home. DAVID E. ACKER, *Secretary*, Arthur D. Little, Incorporated, 30 Memorial Drive, Cambridge, Mass.

• 1939 •

The holidays brought out again some very pleasant memories of past associations and I suppose we all had some warm glows as we received Christmas cards from old friends.

Having just returned from a six-weeks trip around the Orient I was naturally glad to get home, and receiving Christmas cards from Classmates and other Alumni made my own holidays more pleasant.

Prilla and Gus Hunicke wrote on the back of their Christmas card "Here's best wishes from all of us as another Christmas rolls around. Please note change in address (6 Bridge Avenue, Scituate, Mass.), as I have switched jobs. Jim is now 5'-6", 125 lbs. and starts *high school* next year. Oh, my old grey beard! Debbie and Gretchen now becoming young ladies. Please do plan to see us if you are along this way."

Woody and Phyllis Baldwin are now living at 2036 MacArthur St., San Pedro, Calif., and have turned out to be neighbors of mine. They have returned from a tour of duty with Rand Corporation in Ohio, and Woody now joins me and the other thousands all of whom have holes in their heads and who commute some 50 to 60 miles a day from their homes to their places of business.

Genie and Fred Cooke have written a newsy letter to say that they are now living at 7402 Ridgewood Avenue, Chevy Chase 15, Md. Fred is with the Navy and is the father of three charming daughters.

Bill and Adie Pulver have finally gotten it made and wrote on the back of their Christmas card that they enjoyed a vacation in the Caribbean. You may remember that Wylie and Phyllis Corl took a vacation in Bermuda not long ago and I can say, having been in Honolulu with Hilda, that this vacation business in beauty spots like that is really a good one and I can recommend it for all.

Sid Silber has sent a wonderful greeting from Baltimore in the form of a fruit cake. Judging from the taste of this delicious cake, Sid is really cooking with gas these days and I can recommend that all in the neighborhood of Baltimore stop in and enjoy Sid's cooking.

Bob and Maisie Fife '40 are our neighbors living a block away and we've seen them through the holidays. Al Laker and Jim and Barbara Cullison (class of '41) attended a New Year's party at our home and we made every effort to ring in the New Year properly.

Sam and Elaine Sensiper are still planning to build a house here in Los Angeles but have been held up by a building strike so their adventures as prototype Mr. and Mrs. Blandings are still in the future. Bob and Aletta Touzalin from Cleveland, the Bill Wingards from Boston area, George and Billie Cremer from San Diego, the Maynard Drury from Long

Island and Bob and Sybil Saunders from Bennettsville, S. C. all sent greetings, and we heard from Charlie and Miriam Godfrey (class of '40) from Livermore, Calif. where Charlie is working on advanced physics or some other things which most of the rest of us can't understand these days.

A card from the Pete Barnays reads as follows: "Just had the urge to drop you a line to report. I'm an assistant editor for Chemical Abstracts, published by the American Chemical Society, editorial offices at Ohio State University. On Sept. 24 our children tripled — Michael Bruce followed Sally Diane by 8 minutes. Linda Jean was four years old on Nov. 8. We keep busy, but would enjoy seeing class-mates." — HAL SEYKOTA, *Assistant Secretary*, c/o R. T. Collier Corporation, 714 West Olympic Blvd., Los Angeles, Calif.

• 1940 •

The Class of '40 column this month will be brief, although the news is all good. Your secretary received an announcement from the Ed Cooks of the arrival of a son Spencor Nye, born November 12, 1955. This is their third child, the other children being Edward T. Cook III, two and a half years old, and Elizabeth Gallahor Cook, one and a half years old. Through the kind services of Orville B. Denison '11, we received word that Bob Millar has been appointed vice-president in charge of manufacturing of the Rice Barton Corp. Bob previously was president and general manager of the Keleket X-Ray Corporation of Covington, Ky. A goodly number of '40 men were present at the Waldorf-Astoria on January 4, at the dinner given by the Corporation to pay tribute to Dr. Compton. The following Class members all sat together at four tables: Richard Barry, David Brown, Lawrence Carter, Sam Goldblith, Tom Creamer, John Danforth, Robert Gould, Joseph Greenberg, Bernard Greene, John Halford, Edmund Hammond, Ralph Hayward, John Joseph, Wylie Kirkpatrick, Grover Paulson, Schrade Radtke, Louis Russoniello, Sam Stewart, Al Wu, Edward Harris, Gerald McCaul, Frank Penn, Karl Pfister, Louis Berger, James Baird and Lee Hurley Bloom. The entire affair was a wonderful tribute to Dr. Compton. — ALVIN GUTTAG, *Secretary*, Cushman, Darby and Cushman, Washington 5, D.C., MARSHALL MCCUEN, *Assistant Secretary*, 4968 West 14 Street, Indianapolis, Ind. SAMUEL A. GOLDBLITH, *Assistant Secretary*, Department of Food Technology M.I.T., Cambridge 39, Mass.

• 1941 •

If, by the time this column reaches you, you have not received some official mailings on the Fifteenth Reunion, be sure to let Ed Marden or me know at once! The location, in case some of you tuned in late, is the Shore Club of the Mayflower Hotel in Plymouth, on the weekend of June 8, 9, and 10. We have exclusive use of the Shore Club, with its own swimming pool, private beach, and facilities for golf, tennis, sailing, and other sports. The total cost per person, including meals, is only \$32, plus the \$5 registration fee. If you've received the mailing but have neglected to return your postcard and registration

fee to Ed, do it right now — don't delay!

One of the nicest fringe benefits of the Reunion (to the Secretary, that is) is being able to report on the doings of some of the Class, as the story is sifted from their answers to the mailings. For example, the O'Connells are now living in Litchfield, Conn., after ten years in the Midwest, and having arrived there "four days before the floods." Ray is assistant sales manager for The Torrington Company, and at present has two boys, the older being 5'6" and weighing 135. I wonder if Ray can still turn him over his knee? Luis Jimenez is planning in coming all the way from Caracas, Venezuela, to be with us: his business card with the letter gives his firm's name: "Intelec S. A., Ingenieria de Telecomunicaciones" and below "L. G. Jimenez, Presidente." I don't know much Spanish, but I suspect that Luis is doing quite well. Gardner Ketchum writes as follows: "I am now in my third year at Union College, having been given the rare and golden (or at least satisfactorily green) opportunity to return to my first love of teaching and still continue with G. E. as winter-time consultant and summer-time employee. The work at the College has been a great albeit strenuous enjoyment, because the process of establishing a new curriculum and new courses (in mechanical engineering) is an arduous one, even though I have my experience at the Institute to guide me in my part of the effort. My contacts with fellow Alumni are numerous, but with Classmates, few. I see Rea Stanhouse and Julius Kohn at M.I.T. Club and engineering meetings about town, and hear about Joe Quill and others who are still alive and kicking in the Schenectady area." I can vouch for Joe's continuing presence in Schenectady, having had some hands of bridge with him and Millie one weekend last fall. Joe is at present with the Engineering Services Division of General Electric. Ralph Hunt, having completed six months in Seattle on test and evaluation of special B-52 equipment, is now based at Eglin Field, Florida, at the Air Force Armament Center.

The Alumni office has sent me a copy of an excellent autobiographical sketch by Erling Hustvedt, which I shall attempt to summarize in a few sentences. The full story as he has written it covers three and one-half typed pages; this summary, obviously, will touch only the high points. Erling served with the Navy at sea during the war, and was married in November, 1945. He did graduate work at the Tufts College History Department, and received a master's degree in history. The family then moved to Portland, Ore., where he worked for Hyster Company (makers of materials handling equipment), then with another engineer in a consulting office, and then as production control manager of Willamette Iron and Steel Company, a heavy fabricating and machine shop. In 1953, the Hustvedts moved to Menlo Park, a suburb of San Francisco, where Erling worked for the Bechtel Corporation on a nickel smelter being designed and built for the M. A. Hanna Corporation at Riddle, Oregon. He had meanwhile become interested in the Magna Engineering Corporation, the makers of Shopsmith, a multi-purpose wood-working

tool, and when the smelter job was finished, he was hired as project manager of the company's principal diversification project, Magna Drill, an industrial drilling machine. Erling handles all phases of the operation, supervising "a one girl office, an engineer, and four regional sales and service representatives, who work with our fifty dealers." The Hustvedts have a son and a daughter, Eric and Elin, aged 9 and 8.

Ed Sherburne, program director for Boston's educational television station, WGBH-TV, spoke on "The National and Local Aspects of Educational Television" at a meeting of the Worcester Branch of the AAUW. Ed's write-up in the Worcester *Telegram* went as follows: "Mr. Sherburne served five years in the Army during World War II. In 1945, he was director of Engineer Technical Intelligence operations in the European Theater. After the war, he was television director for Gamble productions in New York City; associate producer of 'Manhattan Spotlight,' one of the first regular educational TV programs on a commercial channel, and educational TV consultant of Telefact Foundation in New York. In 1951, he became first TV coordinator of the Navy Special Devices Center TV training project, which was concerned with determining where and how television could be used for instruction of the armed forces. In 1954, as educational TV consultant, he aided in programming and operations for KETC, St. Louis, taught at the TV workshop of Council of National Organizations, and produced closed circuit demonstrations for the Joint Committee on Educational Television." — Ivor W. COLLINS, Secretary, 28 Sherman Road, Wakefield Mass.

• 1942 •

Dr. Warren Loud has temporarily left Minneapolis — but here is the story in a letter from him: "I have a sabbatical leave this year (from the University of Minnesota), and have come to M.I.T. to work on a research project. I have the title of Visiting Fellow. My current research work is in nonlinear differential equations. I have an Ordnance contract to help support me until next fall when we shall be back in Minneapolis again.

"I have an ideal situation for this year. We have rented a furnished three-bedroom house in Melrose which is most satisfactory. I have a little study off the Science Library at Tech, right near all the references I may need, but perfectly quiet and undisturbed. In fact, I have a situation comparable to the Institute for Advanced Study at Princeton, except that Professor Levinson is here, so Cambridge is more suited to my needs.

"You met my wife at our fifth reunion dinner back in 1947. (We were not married at the time, but were married in December 1947.) She is very faithful about reporting the birth of children to the Oberlin Alumni Magazine, so I should catch up. We have three children, Margaret aged six and a half, Elizabeth aged four, and John aged one and a half. Our house in Minneapolis is located near one of the city's eleven lakes. Incidentally, the Twin Cities are a fine community to live in, so if any classmates are considering

locating there, let them not hesitate.

"I go rather regularly to the M.I.T. Alumni meetings in Minneapolis, where we have recently had such speakers as President Killian, B. A. Thresher, and Treasurer Snyder. Paul Hotte was in St. Paul for a time, but has left (he is now in Boston). I'm looking forward to the Alumni Banquet at the Statler this year." Many thanks, Warren, for bringing us up to date. I don't guarantee to acknowledge every change-of-address notice with a post card of welcome, but the replies and intended replies are most welcome to your secretary and to these columns.

A note from John Arend tells us that "In Strategic Air Command we go to our overseas bases for short tours just to practice the problems of moving an entire organization to our forward bases at a moment's notice, and then while over in England, North Africa, or anywhere else to practice operations of our aircraft and personnel from these bases. All of this is pointed to more effective and efficient war in case the USSR ever starts another war.

"In 1953 I spent 30 days in North Africa in B-29's and then again in 1954 I went to the same base for 60 days in B-47's. Actually I was stationed at Lake Charles, Louisiana all this time. As of December 1 I was transferred to Homestead AFB, Fla. about 30 miles south of Miami, and so far we think it's fine. My length of tour here has no set limit, but normally you can expect about 3 to 4 years but it could be much less and it could be longer." Our thanks to you, John, for vigilant protection of the interests of all of us as well as the sidelights on your travels.

An announcement from the Curtiss-Wright Corporation tells us that Monroe R. Brown has been appointed personnel administrator, engineering, of the Wright Aeronautical Division. Prior to this he had been assistant to the chairman of the board of Piasecki Helicopter Corporation. To bring Brownie's story into the records (and for those who missed his interesting yarns at our tenth reunion) he supervised development, procurement and production of aircraft during World War II, and finished his service with the rank of Lieutenant Colonel. He received his M.A. in Engineering Administration from Stanford University in 1946 and attended the University of Virginia and the Field Economic Mobilization course of the Industrial College of the Armed Forces.

Following his military service Monroe was assistant to the works manager of the American Machine and Foundry Company and later was executive secretary of the Helicopter Council, Aircraft Industries Association of America. He is a member of the Air Force Association, the Institute of the Aeronautical Sciences, the Educational Council of M.I.T., and the American Helicopter Society, of which he was vice-president in 1949-1950 and treasurer from 1950 to 1953. In 1949 the American Helicopter Society awarded him a citation "for meritorious contributions to the development of the helicopter industry."

The long distance move of the month is in the report that Charles Stempf is back from building bases in Spain and is now with the Export Department, Worth-

ing Corporation, Harrison, N. J. Three Class members have headed west: Lt. Col. George H. Sickels, Jr. to Colorado Springs; Frank H. Clarke, Jr. to Burbank, Calif.; and Allen G. Quynn, Jr. to Seattle. We note, also that Dr. John D. Allen is now with the California Standard Company in Edmonton, Alberta, Canada; that A. Carleton Jealous has left Oak Ridge and is in New York City with the Union Carbide Nuclear Co.; and that Dr. Robert T. Olsen, Jr. has come north to Melrose, Mass. Also on the move were: Lt. Col. Arthur K. Swanson who is back in this country at Midwest City, Okla.; Dr. Edward T. Thode who is now at the Institute of Paper Chemistry in Appleton, Wisc.; and Gerard R. Torberg, Jr., who is living on Dodge Farm, Chappaqua, N. Y. Data from our Class Agent, Charlie Speas, shows that 83 of us have contributed an average of \$17.50 apiece for a total of \$1453 towards the Alumni Fund's program for Medical Research and Scholarships. — LOU ROSENBLUM, Secretary, Photon, Inc., 58 Charles St., Cambridge 41, Mass.

• 1943 •

Little did I realize that when I started sending out those poetic pleas for news that I had created a monster, bent on destroying its maker. Witness the response I received from Sam Scharff of New York: "In Feingold our Class Secretary, Lurks clearly a fiend literary; His writs writ so bland, Will all of them scan, And rhyme will index the library. . . . This fearful demonic possession, Can lead but to ghastly regression; We'll find horrid puns, In the years' drive for funds, And all end in blackest depression. . . . Copiously write in self-defense only, Placate the demon or exorcise boldly; This pattern outrageous, Suppose it's contagious? Classmates arise! Let us sleep not ignobly."

A card from Chuck Swet advises that in January he joined Convair in San Diego, Calif., as senior design engineer on the development of the "Atlas" rocket. His temporary mailing address is c/o Convair, San Diego. Other long distance moves are: John Barney from Minnesota to Phoenix, Ariz.; Paul Brooks from Massachusetts to Pennington, N. J.; Gil Graves from Springfield, Ohio to Marysville, Tenn.; and Mike Witunski from Washington, D.C. to University City, Mo.

I received the following fine letter from Steve Heller last week, "Your post card has not been forgotten, and during the National Chemical Exposition in Philadelphia it looked like old home week for the Class of '43. While patrolling the aisles of this mammoth exposition I ran into Bob Fettes who is with Rohm and Haas in Bristol, Penna., George Schudel, who is a consultant in Philadelphia, and Jim Spitz, who is with Newport Industries in Pensacola, Fla. I also ran into Bill Terry and Ben Halpern, but my little notebook didn't come out fast enough, so I can't recall where they are. Al Root, who was in the Class of '42 was there; he is with DuPont in Louisville, Ky. The writer is with Glascote Products, Incorporated, in Dayton, Ohio; having a good time, and enjoying life."

In glancing through the *Review* notes I noticed that the Class of 1941 has chosen our reunion spot, The Mayflower Hotel in Plymouth, Mass., for their fifteenth conclave. For you long range planners, then, a gentle reminder that our fifteenth is only twenty-seven months away. In the meantime, our Class is going to have a cocktail party at the June reunion in Boston this year, so watch for further details. Your secretary and his wife are happy to announce the arrival of their second child, — this time a girl — Joanne Susan, on December 29, 1955. — RICHARD M. FEINGOLD, *Secretary*, 49 Pearl Street, Hartford 3, Conn.

• 1949 •

The steady flow of newsclips forwarded from Cambridge once again shows '49 to be a class of many and varied interests. Capt. Carroll E. Adams was recently presented the Army Commendation Ribbon for meritorious service in Austria by Brig. Gen. Galloway at the Engineer School, Ft. Belvoir, Va. Capt. Adams, a graduate of West Point as well as M.I.T. is currently serving as an instructor at the school. Joe Appelbaum and Sylvia Ratnet were married in Hartford last spring. Joe is working with Raytheon in Waltham, Mass.

Milt Bevington is Manager of Marketing Research for the Cryovac Division of Dewey and Almy Chemical Company in Cambridge, Mass. Recently a speaker before the Boston chapter of the American Marketing Association, Milt is also an Instructor of Marketing at the Northeastern University Graduate School. Mike Bonner has been appointed vice-president and general manager of Harry W. Smith, Incorporated technical publicity and technical literature specialists of New York and Chicago. Bruce Campbell was married in late October to Marilyn Till of Marblehead, Mass. Bruce is currently manager of the Massachusetts Safety Council.

Dr. Dennis J. Carney recently appeared before the Cleveland Regional Technical Meeting of the American Iron and Steel Institute. Dr. Carney read a paper on a new type of low-nickel steel. He is now superintendent of the No. 2 electric furnace department at U.S. Steel's South Works in Chicago. His prior positions at the South Works have included physicist, general supervisor of research, and chief development metallurgist. Wilbert Chope who received his M.S. degree at Tech in '49 continues to live one of the success stories of this decade. Together with his brother Henry, their firm of Industrial Nucleonics has started from nothing and climbed to sales of \$4,000,000 in just five years. Wilbert was named "Outstanding Young Man of 1952" by the Columbus, Ohio Jaycees where their plant is located. Chesterfield's recent Accuray promotion is one of the most recent outgrowths of the expanding industrial use of their nuclear process-control instrumentation.

Eugene Clark has recently been appointed to the position of product planning manager in the component sales department of Raytheon. Gene joined Raytheon early in 1955 as an applications engineer. Previously he worked as a sales engineer for Spencer-Kennedy Labs, Cambridge and earlier as Assistant to the

President of the Koss Shoe Company in Auburn, Me. In addition to his Tech degree, he holds degrees from Harvard Business School and the Massachusetts Maritime Academy. Gene is married and has one child. Bert Collins continues his activity as Director of Unemployment Compensation for the Associated Industries of Massachusetts. In April '55 he appeared before the Fall River (Mass.) Chapter of the National Association of Cost Accountants and last November gave a talk before the YMCA Industrial Management Club in Southbridge, Mass.

Frank Coy and Carol Ann Couffer were were married last fall in Scarsdale, N. Y. Frank is now working with United Aircraft in Hartford and previously served as a second lieutenant in the U.S. Air Force. Jack Fogarty got off an informative note to us last summer from Philadelphia where he is working. He has been living in the Friendship housing cooperative and is working with the Eckert-Mauchly (Univac) Computer Division of Sperry-Rand. He previously worked as a senior engineer with Philco and did applications engineering work with Brown Instrument. Jack has his professional engineers license in Massachusetts and is active in amateur radio (W3QWJ). In a more recent note Jack also sends word of his engagement to Margaret Meyer of Moorestown, N. J. Wedding plans are for this spring.

Dr. Walter Forstall, Jr. has been named assistant dean in the college of engineering and science at Carnegie Tech. His current Air-Force sponsored research project — trying to eliminate the vapor trail in the wake of high-flying jet aircraft! Gerry Grott has gone to Texas to initiate operations of the Airloy Company of which he is a co-founder. The firm will manufacture close-tolerance, high-quality steel castings for tools and dies for the oil and aircraft industries and is said to be the only firm of its kind in Texas. Gerry was previously superintendent of standards with the Unitcast Corporation in Toledo, Ohio. Russ Hawes and Constance Clough were married last June in Nashua, N. H. Russ is in charge of the guided missile project at Sanders Associates, Incorporated.

Charles Holmes married Patricia Froelich in Torrington, Conn. last June. Chuck is working with the Sales Department of Pepsi-Cola Company in New York. Frank Hulswit is now working with the operations research staff of Arthur D. Little in Cambridge. Previously Frank had worked at the National Bureau of Standards and the M.I.T. Servomechanisms Lab. The wedding of Hal Ingraham and Sandra Mills took place last June in Springfield, Mass. Hal is working with the Massachusetts Mutual Life Insurance Company. Yet another '49er wedding; Earl Keller and Helen Watson of Brockton, Mass. were married in November. Earl is an assistant professor of electrical engineering at Columbia University. Earl is the first classmate we know of whose wedding took place in the new M.I.T. chapel.

Bob King and Constance Stover were married in Cleveland last summer. The Kings' new home is in Birmingham, Mich. Andy Lang last April played the romantic lead in the Stamford (Conn.) Community

Theater's production of "Picnic." Henry Lang, 49's high-fi authority was featured in a Boston Globe feature story on June 15 titled "An Audience of Grass." Henry engineered the sound system for last summer's Jazz Festival in Newport, R.I. and had to make a dry run of the mike and speaker set-up in a field across from his home in Waltham, Mass. The field was necessary to approximate the sound-absorbing qualities of the open air park where the festival was held. Henry runs a phonograph shop in Waltham.

Ray E. Larson and Muriel Soutter exchanged vows last July in Lowell, Mass. Ray is working with the Larson Tool and Stamping Company in Attleboro. Dr. Henry Linton, Jr. has been promoted to senior research supervisor in the Research Division of DuPont's Polychemicals department in Wilmington. Dr. Linton's work at DuPont has also included the development of processes for making chemical intermediates for plastics and applications for "Teflon" as well as process cost studies. Alden Loud received his Ph.D. from M.I.T. last summer. During the four years leading to his doctorate Alden has been doing research work at Tech. Robert Mahar has been working recently as assistant to the superintendent of the new Manhan Valley Dam in Southamptn, Mass. The mammoth dam will be 2100 feet long at the top and is being built to supply water for the town of Holyoke, Mass.

John Marvin has been appointed to the position of advertising manager for Fulham Brothers, Incorporated, packers of 4-Fisherman Sea Products. John will also be serving as assistant to the president. Herb Neitlich and Carole Goldberg were married last June in Newton Centre, Mass. Herb and Carole are living now in Monroe, La. where he is plant manager for Selig Manufacturing Company. The wedding of Robert Newman and Mary Shaw also took place last June in Houlton, Me. Bob is an assistant professor of Architecture at M.I.T. Justin Perlman has joined the staff of Hughes Research and Development in Culver City, California. Gus previously attended Columbia Business School in New York.

A recent article in "America's Textile Reporter" stresses the large number of openings for qualified engineers in the textile industry. Ed Rudnick is a professor at the New Bedford (Mass.) Institute of Textiles and Technology which is attempting to attract more qualified engineers into this field. James Ryan and Helen Cronin were married last April in Quincy, Mass. Dr. James E. White has been appointed supervisor of the physics section of the Ohio Oil Company's new research center.

At Alumni Day last June the following '49ers were present: Stephen Bragg, George Clements, Fletcher Eaton, John Kirk, Philip Lynn, Bill MacLeod, Tom Martin, Howard Millard, Charles Sutherland, and George McQueen. Your secretary has rejoined the Formica Company here in Cincinnati, Ohio. Jot down the new address and get off a brief note on your whereabouts and activities. Remember, no news, no notes. — O. SUMMERS HAGERMAN, JR., *Secretary*, 740 Hand Avenue, Cincinnati 32, Ohio.

The Merry Month of March is here again — and that means our '51 Reunion is just three months away. I hope that all of you who can are shaping up the final plans to attend our first general reunion. Once more a sincere thank-you is in order for all the fine notes and letters you have been sending along to me. They establish a fine feed-back channel wherein this station can re-transmit the activity news to all of '51.

It is my sad duty to announce that Edmond J. Dozois, Jr., Course VIII, and Gene R. Graham, Course IX, passed away last year. News has reached me that Edmond died on June 8, 1955 and Gene on September 6, 1955. It seems just like a short while ago that I had received a letter from Gene wherein he enthusiastically outlined his plans for going to the Philippines with his wife on an assignment for the California Texas Oil Co.

Activity flourishes in that marital area. First, Steve Eisen and Myra Ann Mintz became engaged in November. Steve will let us know when the ceremony will take place. Bob Hucks and Ruth Naul were married in September at Plainfield, N. J. Bob is working at the Johns-Manville Research Center at Manville, N. J. Al Hurd and Torvy Johnson said "I Do" in October at West Medford. And Larry Schneck and Carolyn Fenn were married recently.

Herb "Sharp-shooter" Voelcker dropped us a line. Herb reports that he was married during the 1954 Christmas holidays. "The Signal Corps sent me to graduate school at Tech to study Electrical Engineering. Since graduation, I have had an advanced development group within the Signal Corps Engineering Laboratories. The group's efforts are centered in high speed, long range radio teletype system." Herb finds the work stimulating and satisfying. He reports that Phil Fleck and Charlie Wagner of the Class of 1952 will be working on the newest system; both men had previously worked with Lincoln Laboratory. Herb and his wife, Jean, keep busy with furniture building and training their black standard French poodle for the dog obedience shows held in Jersey. Another note comes from Bob Cushman. Bob reports that he has moved from Colorado to Syracuse and then to Baltimore where Bob is working for the Gil Martin Company in their Nuclear Division. His job assignment is centered on small reactors for peacetime power. Bob Behmer and George Fulton are also in the Nuclear Division. Sue and Bob keep quite busy now that they are proud parents of two boys — Curtis James arrived in June, 1955. Bob also reported that Larry Hitchins is now a married man having taken his wife in Warren, Ohio in September. Larry is keeping busy at Minneapolis Honeywell in, of course, Minneapolis — nice country, out there.

Herb Yamane is back in Hawaii after a short trip back to New York and Boston. Herb, I could use some of the luscious sunshine and the balmy breezes which abound in Hawaii. John Conley reports that he is still at the American Brake Shoe Company and finds it intellectually stimu-

lating. He is in the Commercial Research department. John says his buddy Fred Bumpus works in the next building so they get together quite often.

Shifting from the U.S. and heading for Greenland we find a letter from Dick Foster. Dick writes: "After graduation I reported for duty at Wright-Patterson Air Force Base at Dayton, Ohio. After discharge I joined Peter Kiewit Sons' Company on their job for the Atomic Energy Commission located just north of Portsmouth, Ohio. Everything was done on a big scale there and I had an excellent opportunity to see a great many types of construction. In August, 1954 I was offered and accepted a permanent position with the Kiewit organization and moved to their home office in Omaha, Nebraska. Working for the Omaha Building Division, I was job engineer on a 300-bed hospital project. In May of 1955 I transferred over to North Atlantic Constructors, a combine in which Kiewit is a leading member. So I came up here to Sondrestrom, an Air Force base on the west coast of Greenland. This is an alternate base for the more well known Thule which is located six hundred miles north of here. My time is divided between the field and the office and I find the work exceptionally interesting. We work ten hours a day every day of the week and there is enough to keep everyone busy all the time." Dick reports that Dick Dresally, another Course I graduate, with the architect-engineers, Metcalf and Eddy of Boston also is at Sondrestrom. Dick stated he might be able to get back for the Reunion. Here's hoping you can make it, Dick.

From sunny California Dan Sully performs his annual jest of giving your secretary some wistful thoughts of that land by enclosing a Christmas card showing palm trees and warm surroundings. Dan and Nan Sully now have three children and are in midst of trying to get a home built. Dave Grossman, back from a tour of Army duty in Alaska, sent in a note to say hello. Dave says he'll try to make the Reunion providing Army activities permit. He'll be a civilian next September. Army Tanguay sent in his annual report (Christmas) covering the activities of the Tanguay Corporation for the year 1955. The Tanguays have completed a breeze-way and garage for their home in addition to finding time to enjoy and take care of their three active children. Thank you all for writing.

And now for some short news items: Arnold Kossar is with the Curtiss Wright Corporation at Woodridge, N. J. Dan von Recklinghausen, Chief Engineer at H. H. Scott Incorporated addressed the Worcester Section of the American Institute of Electrical Engineers on the subject of the history, sources, and components of high fidelity sound systems. Dan did an outstanding engineering design job on the Scott FM-AM Tuner. I understand Sherman Adams appreciates the high quality of Scott products. Paul Carroll '54 of Needham returned from a 35,000 mile tour of Europe and Africa where he studied and observed all type of architecture. According to Paul, Sweden is 25 years ahead of the United States in prefabricated houses and other buildings.

They have been doing it since the early 20's, so that now 75% of the new homes are prefabricated as compared with the 10% in the United States." Paul, at present, is vice-president in charge of architecture and development of New England Homes in Bellingham.

Other Items: John Dennis is now a lieutenant in the Army at Ft. Devens, Mass. Bill Gilbert left in August for a month's cruise on the Atlantis to take part in an oceanic survey. He is a grad student at the University of Minnesota. Dr. Bajirao Gokhale is teaching at the Indian Institute of Technology at Kharagpur, India. Dr. Joseph Gurland is at Brown University in their Engineering Division. Joe Hammond is now a professor at the Georgia Institute of Technology handling Electrical Engineering studies. Dr. Howard Jarrett was named a research supervisor at Du Pont's Experimental Station at Wilmington, Delaware.

Room left for one more note. From England, Glenn Mackey sends us his Christmas greetings also seconded by his wife Eleanor. Glenn and Eleanor Crothy were married on September 19th at Chelsea, England. He is still busy flying jets for Uncle Sam. Hope you can fly over for the Reunion, Glenn! Time to sign off once more. Letters and cards will be most welcome no matter how brief. See you next month — same place and same station. — STAN MARCEWICZ, *Secretary*, c/o The Lorraine, Route 2, Highland, N. Y.

• 1953 •

Last Thursday (12 January) while listening to a speech by Senator Kefauver, I saw Stan Bloom. Stan is here at Harvard finishing up the last lap on his chemistry doctorate. A week ago Saturday I talked with Jul Greenebaum about going to the Harvard-M.I.T. basketball game (final score 60-59 Harvard) but he had a business survey due at 9:00 o'clock that evening which needed some finishing touches. So we did not go to the game. As usual Jul was in excellent spirits and mentioned that he, Gene Richter and Bob McDonald — also at the business school — were planning to attend the Alumni dinner at Tech on February 2. A further note on Bob McDonald — during the latter part of December I noticed an article in the Boston Post entitled "Golf honors to Sarazen at Ouimet Dinner." Bob was one of the first Ouimet scholarship winners and also one of the speakers at the dinner.

Dan Brzezinski was at a Christmas party given by a fellow M.I.T. Alumnus here at the law school. Dan is finishing his studies at Tech in the field of economics.

Joan Fleckenstein Mizer (Mrs. Charles L.) wrote during the early part of December. Joan started on her master's degree in geology at the Colorado School of Mines and while there met Charles Mizer. Joan and Charles were married in December of '54 and Joan — like many other fine wives whom I've met since returning to school — decided that a Ph.D. degree was more important than the M.S. degree. She is working with the British American Oil Producing Company in Denver and "loves her job." Joan asked if

there was anything that she could do as far as the Class Notes were concerned and I told her that I would send her a list of the Alumni in her area. Her address is 64 Prospect Park, Golden, Colo.

Jay Koogle passed a letter from Paul Shepard on to me. Paul is lieutenant in the Navy and is assigned to the Naval Air Station at Brunswick, Me. In December of '54 he and Virginia Healy (Simmonds College '54) were married. Paul's present assignment is Assistant Officer in Charge of Construction. Also from Paul Tom Kelly and Marthe Raye Culbertson were married last November 5 in Hobart, Ind. Tom is the Fuel and Power Engineer at the Gary plant of U.S. Steel.

Berni, Joan, and Joann Kelly sent an attractive Christmas card. Berni is in the Army at Fort McClellan, Ala. He is an instructor in the Chemical Corps School. Joann is 10 months old (Dec.) and Berni says the next one, due about February, is going to be a boy named Brian.

Lionel Kinney received his promotion to 1st lieutenant last September at the Guided Missile School in Huntsville, Ala. Lionel entered the Army in February of '54 and if he is like the rest of us "tourists" (as the Regular Army boys used to call us) he should be released in February of this year; however, his going to guided missile school may indicate an extra year in the Army—possibly more.

Captain Reuben Pomerantz M.S. '53 was awarded the Commendation Ribbon for his work on a radiation sterilization project at the Army Quartermaster Food and Container Institute. Robert H. Wilkie M.S. '53 received his Llb in June of '55 and was recently appointed plant manager of the New Departure Division of General Motors Corporation in Bristol, Conn.

In November of last year William Gent was appointed field engineer in the Cleveland sales office of the Warner and Swasey Company. That wraps up this month's news, see you next month. — VINSON W. BRONSON, JR., *Secretary*, 19 Mellen St., Cambridge, Mass.

• 1954 •

Now that we are well into 1956, I suppose that it might be a good idea to pass on a few items concerning events of 1955, while they still might be news to some of you. Gene Leary and Franceline Cullen were married last October 29 and are now living in West Hartford, Connecticut. Gene is a metallurgist at Pratt and Whitney in Hartford. Bill Beals married Ethelyn Mills on November 25. Bill is currently at Tinker Air Force Base, Oklahoma. Dave Springsteen and Nancy Neller took the fatal step also last fall, and are now living in Elyria, Ohio. Dave is working for Uncle Sam at the National Advisory Committee for Aeronautics in Cleveland. He's doing some kind of research in metallurgy. Mr. and Mrs. Warren Davis became the parents of twins David and Scott on September 29. Warren has a government job in Arlington, Va. So, belated congratulations to all.

Among the sundry pieces of mail arriving here in St. Louis recently was a note from Larry Leonard. Larry is still at Tech, reaching for a master's degree in metallurgy. (The metallurgists seem to

have taken over this month.) Larry says that he is still single and plans to stay that way for a while. He and Jerry Cohen are sharing an apartment in Brookline, Mass., at the present time. I guess this means that Jerry is still at Tech too. Larry mentioned that Dick Morley is engaged, but didn't say to whom. Jack Maier and John Wahl got together and constructed a note in which they tell me that they are stationed at Dugway Proving Grounds in Utah. They both are working hard as Mess Officers. Terry Palmer is also at Dugway, but in a civilian status. Paul Valerio writes from Brooklyn that he is to be married to Agnes Belleuri next month and then will head out to California to work on a master's degree at U.C.L.A. Paul has been working with a consulting engineering firm in New York City. Paul says that he has heard from Sooren Soovajian who is in Munich, Germany with the Army, and from John Zarcaro who has a commission in the Navy and is trying to get his wings at an undisclosed air base in Florida.

Dean Jacoby sent along quite a few items. Larry Holmes, Bruce Backe and George Perry are all Second Lieutenants at Wright-Patterson Air Force Base in Ohio. Mr. and Mrs. George Wills are living in St. Louis, where George is working for the Mallinckrodt Chemical Company. The Masisons — there are now four: Chuck, Ruthie, Dickie and Jimmie — are holding forth in Arlington, Va. Dave Vogel has finally been caught by Uncle, and is across the water in England. Steve Floren, Bob Jones and Jim Rollbuhler are all with Dave Springsteen at the National Advisory Committee for Aeronautics in Cleveland. Steve is working with Dave on a research project in metallurgy. Bob is playing around with engine fuels, and Jim is trying to do something with rocket fuels. Ron McKay is an instructor at the Engineer School at Fort Belvoir. And Rog Griffin is still at Centerline, Mich., wondering what he is going to do when he gets out of the Army.

A few other notes picked up here and there show that Charlie Burnham is now at Wright-Patterson Air Force Base and Don Cassidy is stationed at Fort Monmouth, N. J. Dave Chorlian is now at Picatinny Arsenal in New Jersey. Marion Jablonko has changed his first name to Mark. He is living in New York City at present. Bill Mayhew is with the Air Force in Plattsburg, New York. Abe Perera is also drawing his paycheck from Uncle Sam, but at Fort Belvoir, where all of us seem to end up sooner or later. And finally, Perry Smoot is still in the Army, but living at the U. S. Naval Base at Norfolk, Va. Keep the news coming. — EDWIN G. EIGEL, JR., *Secretary*, 3654 Flora Place, St. Louis 10, Missouri.

• 1955 •

Greetings, tigers! We've got news for you! Of course, our sources are varied, and our biggest source is the grapevine; so be it known, here and now, the Class of 1955 does not respond to libel charges. If you learn here that you've been married, divorced, drafted, or exiled, don't be angry; just be flattered that your friends are *trying* to keep up with you. But if you like to read the truth about yourself,

there's an infallible way of insuring that happy situation.

In connection with this we hereby print our first formal apology (we sure hope it's our last). We recently received a letter from Bob Dettmer that began, "You don't know how surprised I was to read about my marriage to Elenor Coburn in the 1955 Alumni Column of the Technology Review. I daresay Miss Coburn was even more surprised!" Bob goes on to say that his wife is the former Patricia York of West Hartford, Connecticut, and that Miss Coburn was her roommate at Wellesley and her maid-of-honor. Bob, we are very sorry. (We are sure it won't happen again!) Seriously, we hope this sufficiently clears up the situation and that the rest of you will take the introductory paragraph to heart and save us further embarrassments.

The architects have really been making the news lately. Bill Bohnert, who is now in New Haven at the Yale School of Drama, was a member of the cast of "The Unexpected Truth," presented in December for the first time in this country by the Drama School. Marty Raab and Gail Leff, both of Manhattan Beach, are now engaged; Marty is in the Army Signal Corps these days. Dan Allen and Joan Sternkopf of Summit, New Jersey, a Sargent graduate, were married back in November. Ex-architect now civil engineer, Bob Cruickshank is at Thule Air Force Base, Greenland, for a year, working on the massive construction job which the Army Corps of Engineers is doing there. And Jack Dixon has left Fort Devens for the Pacific (address: ASA Far East, APO 500, San Francisco). Still defending us at Devens are Frank Wood, and Harry Farrah. Recent (well, not too) graduates of the Army's assorted courses are Roger Mackay, who was at The Engineer School at Fort Belvoir and John McNeilly who was at Fort McClellan in the Chemical Corps School. Another now at Belvoir is Dave Friedman. Dale Madden is at Army Chemical Center, Maryland. By the way, we've received quite a stack of new addresses from the Alumni Association; so if you're in search of someone, we might be able to help. On the other hand, we know numerous people who have moved, but we've received no change of address notices. Do let us or the Alumni Association know where you are.

We just recently received the announcement of the marriage of Sea McGown and Frances Morse of Shrewsbury, Mass. At last, Sea! Also Bill Karis and Jacqueline Hazel Pomeroy of West Hartford took the big step way back in October in a wedding well populated with M.I.T. Kappa Sig's. The Karises are now in Montreal, where Bill is attending McGill.

The "Nasatir Newsletter" has some items of interest. We hope Dave doesn't mind the plagiarism. "Bob Kolenkow writes of school life in Gottingen while his wife Anitra learns Persian and Russian in Germany. Lenny Wharton outlined his intriguing plans for his holiday travels. Tad Hashour describes Rome as an architect's paradise."

Another piece of competition has arisen from the far West with a Hollywood title — "Pasadena Confidential" edited by Dave and Toby Brooks. The first issue

was designed to bring all up to date with "Our Mr. Brooks," and wife. Dave is attending geology grad school at Caltech, and Toby is attending classes in education at USC in L. A. A wonderful Thanksgiving was spent by them in San Francisco with Dave and Maralyn Nasatir. The rest of the publication gives us the general impression that married grad student life in Pasadena is the thoroughly enjoyable occupation for the Brooks'. Dave had a big gripe about the way *Technique* treated him. They made a mistake in the printing of his home address, and he has received very little mail because of it. His true home address is 45 Center Street, North Easton, Mass., and his present address is 760 E. California Street, Pasadena, Calif.

Received a wonderful letter from Dave Rados. He was with Du Pont in New Jersey since September. At the same time

he took a night course in banking at Columbia. Dave is now (as of Jan. 31) at Wright-Patterson with the USAF. He bumped into Glenn Jackson at Christmas time, and tells that Glenn is at Lackland, and having a great time.

John Seiler has been pushing good ol' Tech at the Choate School where he is an instructor this year. During their Christmas vacation, he brought up a few boys to see M.I.T. Good work, John.

Bill Antoine was around Tech for a visit in December. He is still in the paratroops, and is planning on going back to school, probably U. of Cal., upon discharge. Bill looks great, and believe-it-or-not, is still growing. Guess the Army is really agreeing with him.

Some Tidbits: We hear that Les Lee is at Stanford, that the John Hedbergs are in Louisville, and that Gary Brooks is at G. E. in Pittsfield, preparing to take

the big step in June. Harry Bishop is in Pittsburgh with Jones and Laughlin Steel: Mike Chipolone is with Esso in Linden, N. J.; L. B. Martin is in Culver City, California, with Hughes Research and Development.

Bob Buntschuh is at Cornell Grad School going for M.S. in E.E. We also hear that wedding bells will be ringing for him soon. Bob Hartman is with Edgerton, Germeshausen, and Grier in Cambridge. Phil Meyforth is a Research Assistant at the DAC Labs at Tech. Al Cron is at M.I.T. Instrumentation, Bedford, and Larry Coffin is at the Western Reserve (Ohio) Medical School.

And we're still in the same old places, dying for news. P.S. You're invited to swim in Cincinnati anytime! —DELL F. LANIER, *Secretary*, 3011 Vernon Place, Cincinnati 19, Ohio. L. DENNIS SHAPIRO, *Assistant Secretary*, Room 10-483, M.I.T.

Of course your reservation has been made for the

WESTERN REGIONAL CONFERENCE

to be held at the

HOTEL AMBASSADOR, LOS ANGELES,

SATURDAY, MARCH 17, 1956

Internationally known members of the M.I.T. Faculty will offer a well-rounded program on the general theme, "The Impact of Today's Technology." For example:

George R. Harrison, Dean of Science, will discuss with you problems of "Frontiers of Science."

Theos. J. Thompson, Associate Professor of Nuclear Engineering will bring you latest thinking on "The Nuclear Reactor as a Tool for Research and Industry."

H. Guyford Stever, Chief Scientist for the Air Force whose appointment as Associate Dean of Engineering was recently announced, will speak on "Aeronautics' Current Technical Challenges."

E. P. Brooks, Dean of the School of Industrial Management has an important message on "Today's Plans for Tomorrow's Management."

At luncheon, J. A. Stratton, Vice-president and Provost will speak on the place of government sponsored research and will present the film, "SAGE," a concise and exciting description of continental air defense.

At the evening banquet, President James R. Killian, Jr. will review the role of educational institutions of science, engineering and management — and M.I.T.'s recent advances.

If you require additional information — or if you are one of the few who have not yet made reservations for this important Western Conference — we urge you to communicate immediately with

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NEW TREND IN AMMONIA PLANTS



LUMMUS' 60 T/D UNIT FOR WESTVACO

One of the least expensive ammonia plants ever built went on stream in October 1955 at the South Charleston, West Virginia plant of the Westvaco Chlor-Alkali Division, Food Machinery and Chemical Corporation.

It is a small, automatic unit designed to operate with a labor force of two operators per shift, and produce 60 tons per day of anhydrous ammonia from waste chlorine cell hydrogen. Carefully designed and engineered for low investment and low operating costs, and incorporating all the latest safety features, the plant will have an unusually short payout time.

This small, minimum investment unit may well be the prototype for agricultural and industrial ammonia plants of the future. Because ammonia cannot be shipped over long distances, many such units, properly placed at hydrogen, natural gas, fuel oil and other sources throughout the country, would conveniently serve limited local areas.

Lummus built the plant around existing Westvaco facilities in an extremely confined area (as shown in the above photograph) without interrupting any normal plant opera-

tions, yet completed the job ahead of schedule in a brief seven months, with an excellent start-up. Westvaco was pleased with the job all along the line, from idea through operation.

This is one of four ammonia projects by Lummus in the last two years, and adds another to the 700-plus major installations completed by Lummus throughout the world.

May we work with you on your next project?

The Lummus Company, 385 Madison Avenue, New York 17, New York. *Engineering and Sales Offices:* New York, Houston, Montreal, London, Paris, The Hague, Bombay. *Sales Offices:* Chicago, Caracas. *Heat Exchanger Plant:* Honesdale, Pa. *Fabricated Piping Plant:* East Chicago, Ind.

LUMMUS

DESIGNING ENGINEERS AND CONSTRUCTORS FOR
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NEW Low Cost KLYSTRON OSCILLATOR



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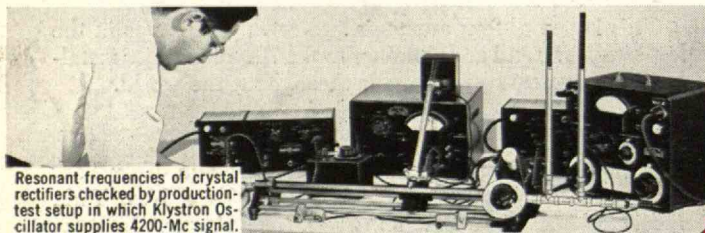
Type 1220-A
Unit Klystron Oscillator
shown here with plug-in
Type 1201-A Unit
Regulated Power Supply.

The Type 1220-A Klystron Oscillator is a low cost, small and compact microwave signal source designed for use where the complexity of a signal generator is not required. This new Oscillator is both convenient and flexible in operation . . . a UHF-SHF signal source that is capable of producing a stable high-frequency signal of adequate power for laboratory measurements, production-test work, or for use in college experimental class.

Standard reflex klystron tubes with self-contained cavities are used in the Oscillator. Eight different tubes are provided to cover the 2.7 to 7.5 kMc range. An important feature of this versatile self-contained unit is the provision for internal square-wave modulation, and the ease with which it can be pulse or frequency modulated from external sources.



1220-A Unit Klystron Oscillator supplies JAN specified 3000-Mc for measurement of coaxial-cable attenuation characteristics.



Resonant frequencies of crystal rectifiers checked by production-test setup in which Klystron Oscillator supplies 4200-Mc signal.

SPECIFICATIONS

Type 1220-AO Klystron Oscillator, \$205, without tube

Frequency Range: Depends on klystron tube used (see table); all units are otherwise identical — frequency range of any unit can be changed to that of any other by inserting the appropriate klystron tube.

Range	Type No. & Price* Klystron Oscillator including tube	Klystron Tube Type	Price for Tube only	Nominal Power Out (mw) Average Over Frequency Range
2700-2960 Mc	1220-A1, \$254.65	726C	\$ 49.65	100
2950-3275 Mc	1220-A2, \$272.90	6043	\$ 67.90	90
3400-3960 Mc	1220-A3, \$265.75	2K29	\$ 60.75	90
3840-4460 Mc	1220-A4, \$312.15	2K56	\$107.15	75
4240-4910 Mc	1220-A5, \$261.45	2K22	\$ 56.45	100
5100-5900 Mc	1220-A6, \$301.45	6115	\$ 96.45	80
5925-6450 Mc	1220-A7, \$272.90	QK404	\$ 67.90	100
6200-7425 Mc	1220-A8, \$272.90	5976	\$ 67.90	90

The klystron tubes used in these oscillators are designed for relatively infrequent tuning. The flexible copper diaphragm used to vary the frequency is subject to failure due to fatigue.

*Note: Power Supply Required.

Internal Modulation: 1-kc square wave, adjustable ± 15 cycles

External Modulation:

Square wave, 50 c to 200 kc; sine or square-wave modulating signal of at least 15v, rms required — G-R Type 1210-B R-C Oscillator recommended modulator.

Pulse, 1 to 10,000 μ s duration, 0.25 μ s rise and fall time, 50 c to 200 kc repetition rate; at least 20v peak pulse voltage required — Type 1217-A Unit Pulser recommended modulator.

Frequency Modulation at least ± 10 Mc excursion obtained with less than 3 db change in output — at 60 c an rms input of the order of 10v is suitable.

Output Connector: 50 Ω Type 874 Coaxial Connector.

Power Supply:

Type 1201-A Unit Regulated Power Supply, \$80.00, recommended for high stability and minimum incidental fm.

Type 1203-A Unit Power Supply, \$40, for less critical applications where cost is an important factor.

Type 1202-A Unit Vibrator Power Supply, \$125.00, for use in the field from 6v or 12v, d-c power.

Accessories Recommended: Type 874-G10 10-db Pad and Type 874-G20 20-db Pad — Type 874-Q series of Adaptors for connection to circuits fitted with military-type connectors.

We Sell Direct. Prices shown are net, f.o.b. Cambridge or West Concord, Mass.

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